

Nousari, Hosseini C.; Deterding, Robin; Wojtczak, Henry; Aho, Sirpa;
 Utto, Jouni; Hashimoto, Takashi; Anhalt, Grant J.
 The New England Journal of Medicine
 May 6, 1999; 340 (18), pp 1406-1410
 LINE COUNT: 00386 WORD COUNT: 05339

TEXT

...an overt or occult neoplasm and causes blisters. It is characterized by the presence of IgG autoantibodies that react against desmosomal and hemidesmosomal plakin proteins, (Ref. 2-5) desmosomal transmembrane proteins...

...stratified squamous epithelium results from acantholysis, the loss of cell-cell adhesion, induced by pathogenic antibodies against the desmogleins. (Ref. 6) The most commonly associated neoplasms are, in decreasing order of...

...effects induced by chemotherapy, neoplasia, and autoantibody-mediated pulmonary injury. (Ref. 7-16) Deposits of IgG in the bronchial epithelium which have sometimes been observed, (Ref. 17) suggest that autoantibody-mediated...

...on the genitals, trunk, and extremities. A skin biopsy specimen showed acantholysis with deposition of IgG and complement on the surfaces of keratinocytes and along the basement-membrane zone. Serum autoantibodies characteristic of paraneoplastic pemphigus were detected at a titer of 10,000; their antigenic...

...that occurs in two variants: a benign, localized, hyaline vascular type and an aggressive multicentric plasma-cell type...

...cough, which was productive of white sputum. Skin and mucosal lesions remained in clinical remission. Serum autoantibodies characteristic of paraneoplastic pemphigus remained present at a titer of 250...showed changes resembling lichen planus and necrosis of the keratinocytes. Direct immunofluorescence showed deposition of IgG and complement on the keratinocyte surfaces and deposition of complement along the basement-membrane zone. Serum autoantibodies associated with paraneoplastic pemphigus were present at a titer of 1280; their antigenic specificity was confirmed by immunoprecipitation. The mucocutaneous lesions resolved slowly with the administration of 1.0 mg of prednisolone per kilogram per day...

...severe hypoxemia, and spirometry revealed severe airflow limitation (Table 1). Sputum cultures were negative for Mycobacterium tuberculosis and other bacteria. Bronchoscopy showed erythema and edema of the respiratory epithelial mucosa with...

...the mucocutaneous lesions appeared. When he died, paraneoplastic pemphigus autoantibodies were still present in the serum at a titer of 640. An autopsy was not performed...

...Brenn, periodic acid-Schiff, Gomsa, Fite, and pentachrome stains. Frozen sections were probed with fluoresceinated antibodies specific for IgG, IgA, IgM, complement, and fibrin. (Ref. 18) Written informed consent was obtained from both patients for the...

...Serum samples from both patients were tested by indirect immunofluorescence with the use of monkey esophagus and murine bladder, heart, and liver as substrates. Serum from these patients, from a control patient with lymphoma-associated paraneoplastic pemphigus, and from a...

...as previously described. (Ref. 19) Additional radiolabeled extracts were prepared in an identical fashion from human respiratory epithelial cells (Clonetech, San Diego, Calif.) that were grown in bronchial-epithelial-cell growth...

...bullosus pemphigoid antigen I, desmoplakin I and II, envoplakin, and periplakin were cloned from a human matchmaker complementary DNA library (Clonetech, Palo Alto, Calif.) by the polymerase chain reaction with the use of primers according to published techniques. (Ref. 5) Reactivity of serum to the fusion proteins was tested by immunoblotting...

...For passive transfer of IgG into mice, IgG was purified from specimens from Patient 1 (Ref. 1,20) and injected into neonatal mice...

...of choice for such passive-transfer studies because their small size allows reproduction of circulating IgG levels similar to those in the human disease and because their hairless skin facilitates the induction and observation of cutaneous blistering. After...

...sections were obtained. All epithelial surfaces were examined for signs of acantholysis and deposition of human IgG...row of tombstones (Fig. 1). A mixed inflammatory infiltrate consisting of lymphocytes, neutrophils, eosinophils, and plasma cells was present in the submucosa. Staining with specialized reagents did not reveal bacteria, fungi, mycobacteria, or *Pneumocystis carinii*. Pentalchrome staining, which can reveal changes in elastic fiber and collagen indicative...

...no cytologic evidence of cytomegalovirus infection or cancer. Evaluation of frozen tissue showed deposition of IgG and complement in a linear manner on the respiratory-epithelial-cell surfaces and in a...

...of "tombstones'" characteristic of the loss of cell-cell attachment (acantholysis) mediated by the pemphigus antibody (hematoxylin and eosin, x400). * * FIGURE OM TTED*|*Figure 2.-Direct Immunofluorescence of the Endobronchial-Biopsy Specimen from Patient 1. Linear deposition of IgG is visible on the surfaces of the respiratory epithelial cells (open arrow) as well as...

...deposition is identical to that seen in the epidermis of patients with paraneoplastic pemphigus (anti-human IgG x400) * * FIGURE OM TTED...

...Both patients' serum samples contained IgG autoantibodies that reacted to the epithelial surfaces and basement membrane of monkey esophagus as well as to murine urinary-bladder epithelial cells, intercalated disks of myocardium, and hepatocyte desmosomes. Serum from both patients also contained antigens of 250, 230, 210 (a doublet), and 190 kd...

...was detected in the keratinocyte extracts but not in the respiratory epithelial extracts. The control serum from the patient with pemphigus vulgaris did not detect expression of the 130-kd pemphigus...

...Pemphigus Autoantibodies with Respiratory Epithelial Antigens. Immunoprecipitation was performed on metabolically labeled keratinocytes and normal human bronchial epithelial cells. Molecular weight (MW) markers are shown at 200, 116, and 97 kd. Lanes 1 and 2 show control serum from a patient with paraneoplastic pemphigus. Serum from epidermal cells (lane 1) contains autoantibodies that recognize the paraneoplastic pemphigus antigen complex, with bands detected at 250, 230, 210, 190, and 170 kd. Serum from respiratory epithelial cells (lane 2) immunoprecipitates protein bands at 250, 230, 210 and 190...

... and 4 (Patient 1) and lanes 5 and 6 (Patient 2) show antigens recognized by serum from patients with paraneoplastic pemphigus and pulmonary involvement. Serum from both patients reacts with plakin antigens expressed by both keratinocytes (lanes 4 and 5...).

... 7 shows results with respiratory epithelial cells from a patient with pemphigus vulgaris; this control serum fails to immunoprecipitate any of the antigens of the paraneoplastic pemphigus complex. This finding confirms...

... the pemphigus vulgaris antigen is not expressed by respiratory epithelial cells, as expected. This control serum also shows that the 170-kd antigen is expressed in epidermal cells, but not in...

... The serum samples reacted strongly to fusion proteins from the homologous tail region of envelopplakin, reacted with...

... from neonatal mice showed cutaneous acantholytic blistering. We detected neither acantholysis nor specific deposition of human IgG in the bronchial epithelium, despite the presence of human pemphigus autoantibodies in the serum at a titer of 1280...

... Pemphigus diseases of the skin are characterized by acantholytic blistering caused by the reaction of IgG autoantibodies against desmogleins. In pemphigus foliaceus, blisters are superficial; mucous membranes are never involved. Antibodies against desmoglein 1 are responsible for this limited form of the disease. In pemphigus vulgaris, patients also produce antibodies against desmoglein 3, and blisters form on both the skin and the mucous membranes. However...

... In patients with paraneoplastic pemphigus, pathogenic autoantibodies react against the desmogleins, but the antibodies are present at a low titer and can be detected only by a sensitive enzyme...

... proteins. (Ref. 4) The plakins are a group of sequence-related proteins that form the intracellular plaques of desmosomes and hemidesmosomes and that mediate attachment of the cytoskeletal intermediate filaments to...

... Bronchial epithelial tissue from these patients showed acantholysis and deposition of IgG autoantibodies on the cell surfaces. There is no evidence that antibodies against desmogleins play any part in the induction of respiratory lesions. In patients with pemphigus...

... We focused on antiplakin antibodies because desmogleins are evidently not involved in pulmonary injury and because our labeling studies showed...

... proved. Pulmonary epithelial lesions were not induced in mice either by infusion of pemphigus vulgaris IgG (with antibodies specific for desmoglein 3) (Ref. 20) or by IgG with antibodies against plakin proteins from patients with paraneoplastic pemphigus. However, there are potential explanations for these...

... First, plakin proteins are entirely intracellular. Although there is evidence that autoantibodies may enter living ... understood. Second, in passive-transfer studies in neonatal mice, the duration of exposure to the human autoantibodies is generally less than 48 hours. This is due to the behavior of the...

... be starved or eaten by the mother within 72 hours. Short-term exposure to transfused antibodies may not be sufficient to cause respiratory acantholysis. Third, in humans, pulmonary involvement in paraneoplastic...

... usually a late complication. It may be that additional inflammatory

events occur to allow these antibodies to bind within the desmosomal plaque of respiratory epithelium. The immaturity of neonatal bronchial epithelium...

...cytotoxic mechanisms may be important, and such mechanisms cannot be reproduced by passive transfer of IgG alone into the mice...

CITED REFERENCES

- ...3. Gurster JR, Labib RS, Ariss-Abdo L, Burke T, O Keefe EJ, Anhalt GJ. Human autoantibodies against desmoplakin in paraneoplastic pemphigus. *J Clin Invest* 1992;89: 1775-82.
4. Kim ..
- ...J. Stanley JR. The members of the plakin family of proteins recognized by paraneoplastic pemphigus antibodies include periplakin. *J Invest Dermatol* 1998; 111:308-13.
6. Aragai M, Nishioka T, Nousari HC, Anhalt GJ, Hashimoto T. Autoantibodies against desmoglein 3 (pemphigus vulgaris antigen) are present in sera from patients with paraneoplastic pemphigus...
- ...JJ, Beals TF, Diaz LA. Induction of pemphigus in neonatal mice by passive transfer of IgG from patients with the disease. *N Engl J Med* 1982;306: 1189-96.
21. Amagai ...
- 106: 351-5.
23. Koulou L, Kusumi A, Steinberg MS, Klaus-Kovtun V, Stanley JR. Human antibodies against a desmosomal core protein in pemphigus foliaceus. *J Exp Med* 1984;160: 1509-18...
- ...Puccetti A, Jarett L, Madaio MP. Receptor-mediated cellular entry of nuclear localizing anti-DNA antibodies via myosin 1. *J Clin Invest* 1997; 100: 25-31.

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Set	Items	Description
S1	43	E1-E6
S2	22	RD (unique items)
S3	2	AU-'LAHENZ J.'
S4	21	E2-E6
S5	12	RD (unique items)
S6	0	S5 AND (IMMUNOL? OR I G? OR COLUST?)
S7	12	S5
S8	1	AU-' BENI TEZ, MAXIMO MARTINEZ'
S9	2	E1-E2
S10	3	AU-' HERNANDEZ, YAMILE LOPEZ'
S11	4	AU-' BOURZAC, JUAN FRANCISCO INFANTE'
S12	2	RD (unique items)
S13	73946	MYCOBAC? AND (COLSTR? OR I G? OR IMMUNOGL? OR ANTI BO? OR - SERUM
S14	9685	S13 AND (IGG OR I GA)
S15	2563	S14 AND (ADM N? OR INTRA?)
S16	2563	S15 AND (MYCOBAC?)
S17	1301	S16 AND (LACTA? OR MAMMAL OR HUMAN)
S18	806	S17 AND (MONOCLONAL OR POLYCLONAL OR PLASMA OR SERUM OR COLUST?)
S19	797	S18 AND (HUMAN OR MAMMAL)
S20	57	S19 AND (((HUMAN) (W (COLOS? OR PLASMA OR SERUM OR I GA OR I GGI)) OR ((MAMMAL) (W (COLOS? OR PLASMA OR SERUM OR I GA OR I GGI))))
S21	45	RD (unique items)
? s s21 and mycobac?		
	45	S21

631108 MYCOBAC?
 S22 45 S21 AND MYCOBAC?

ABSTRACT:

Immune stimulating activity was compared for lipid vesicles consisting of the total polar lipids of an archaeon *Halofexax volcanii*, and the eubacteria *Planococcus* spp. and *Bacillus firmus*. Each total polar lipid extract readily formed liposomes of similar size, within which the protein antigen ovalbumin was entrapped, with comparable loading and...

titers for all adjuvants, with memory recall responses that were significantly greater with the archaeal lipid (*H. volcanii* versus *Planococcus*). More striking, induction of cytotoxic T cell activity against the entrapped...

secondary response after injections on days 0 and 21) in mice immunized with *Planococcus* spp. liposomes, was sustained in mice immunized with *H. volcanii* archaeosomes. Surprisingly, antigen free-*Planococcus* liposomes evoked potent non-specific inflammatory cytokine production (IL-12 and IL-6) by dendritic cells...

This suggested that overt inflammatory response might not necessarily aid sustenance of immunity. *B. firmus* liposomes consisted of phosphatidyl glycerol, phosphatidylethanolamine and cardiolipin and was an ineffective CTL adjuvant, even for initiating a primary response. Considering that the polar lipids of *H. volcanii* and *Planococcus* spp. both consist of the same lipid classes (sulfoglycolipids, phosphoglycerols, and cardiolipins), the unique ability of archaeosomes to maintain antigen-specific T cell immunity may be attributable to a property of the archaeal 2, 3-di phytanyl glycerol lipid core.

DESCRIPTIONS: Adjuvants; Liposomes; Immune response; Animal models; Immunization; Lymphocytes T; Cytokines; Interleukin 12; Interleukin 6; Lipids; Vaccination; Ovalbumin; Halofexax volcanii; Planococcus; Bacillus firmus

3/3, K/2 (Item 2 from file: 24)
 DIALCG(R) File 24: CSA Life Sciences Abstracts
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0002579884 IP ACCESSION NO: 5910066
 Archaeosomes as Self-adjuvanting Delivery Systems for Cancer Vaccines

Krishnan, L; Sprott, GD
 National Research Council of Canada, Institute for Biological Sciences, 100 Sussex Drive, Ottawa, Ont., K1A 0R6, Canada,
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Journal of Drug Targeting, v 11, n 8-10, p 515-524, 2003
 PUBLICATION DATE: 2003

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 1061-186X

FILE SEGMENT: Medical & Pharmaceutical Biotechnology Abstracts

Krishnan, L; Sprott, GD

ABSTRACT:

... cells is critical for protective vaccination against tumors, we compared the ability of various archaeosome lipid compositions to evoke a strong CD8 super(+) CTL response to entrapped antigen. Subcutaneous immunization of mice with ovalbumin (OVA) entrapped in all archaeosome lipid compositions evoked a primary (day 10) splenic CTL response indicating processing for MHC class I presentation. Interestingly, several polar lipid compositions from halophilic archaea were very potent to adjuvant this early CTL response. Despite this...

...protective CD8 super(+) response against B16OVA metastasis, indicating potential for targeting self-tumor antigens. Thus, lipid structural properties of archaea may differentially modulate the primary, long-term and/or innate immunity, impacting...

3/3/K/3 (Item 3 from file: 24)
DIALCG(R) File 24: CSA Life Sciences Abstracts
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0002444549 IP ACCESSION NO: 5555773
Safety of archaeosome adjuvants evaluated in a mouse model

Patel, GB; Omri, A; Deschatelets, L; Sprott, GD
Department of Chemistry and Biochemistry, Laurentian University, 935 Ramsey Lake Road, Sudbury, Ontario, Canada P3E 2C6, [mailto:girish.patel@rc.ca]

Journal of Liposome Research, v 12, n 4, p 353-372, November 2002
PUBLICATION DATE: 2002

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0898-2104

FILE SEGMENT: Industrial & Applied Microbiology Abstracts (Microbiology A); Medical & Pharmaceutical Biotechnology Abstracts

Patel, GB; Omri, A; Deschatelets, L; Sprott, GD

ABSTRACT:

Archaeosomes, liposomes prepared from the polar ether lipids extracted from Archaea, demonstrate great potential as immunomodulating carriers of soluble antigens, promoting humoral and...

...immunity in the vaccinated host. The safety of unilamellar archaeosomes prepared from the total polar lipids (TPL) of *Halobacterium salinarum* Methanobrevibacter smithii or *Thermoplasmatacidiophillum* was evaluated in female BALB/c...

...with any of the archaeosome adjuvants. None of the antigen-free archaeosomes elicited significant anti-lipid antibodies when subcutaneously injected (1 mg each at 0, 1, 2, and 4 weeks) in mice, although anti-*H. salinarum* lipid antibodies were detected. These anti-lipid antibodies cross-reacted with the TPL of *T. acidiophillum* archaeosomes but not with the TPL of *M. smithii* archaeosomes nor with lipids of ester liposomes made from L-alpha-dimyristoylphosphatidylcholine (DMPC), L-alpha-dimyristoylphosphatidylglycerol (DMPG), and cholesterol (CHOL). In vitro...

...5 mg/mL concentration. At this concentration, *H. salinarum* archaeosomes and DMPC/DMPG/CHOL ester liposomes caused about 2% and 4% hemolysis, respectively. Based on this mouse model evaluation, archaeosomes are...

DESCRIPTIONS: Vaccines; Safety; Liposomes; Hemolysis; Ovalbumin; archaeosomes; Halobacterium salinarum; Methanobrevibacter smithii; Thermophilic acidophilius; Halobacterium salinarium

3/3, K/4 (Item 4 from file: 24)
DIALOG(R) File 24: CSA Life Sciences Abstracts
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0002221849 IP ACCESSION NO: 5142120
Molecular Mechanisms of Water and Solute Transport across Archaeabacterial Lipid Membranes

Matai, JC; Sprott, GD; Zeidel, M.
Renal-Electrolyte Division, Department of Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania 15261, USA

Journal of Biological Chemistry, v 276, n 29, p 27266-27271, July 20, 2001
PUBLICATION DATE: 2001

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0021-9258

FILE SEGMENT: Bacteriology Abstracts (Microbiology B)

Molecular Mechanisms of Water and Solute Transport across Archaeabacterial Lipid Membranes

Matai, JC; Sprott, GD; Zeidel, M.

ABSTRACT:

... and both high and low extremes of temperature and pH. The bulk of their membrane lipids are polar, characterized by the archaean structural features typified by ether linkage of the glycerol...

...Bacteria and Eukarya. Also unique to these bacteria are macrocyclic archaeol and membrane spanning caldarchaeol lipids that are found in some extreme thermophiles and methanogens. To define the barrier function of...

...on permeabilities, we investigated the water, solute (urea and glycerol), proton, and ammonia permeability of liposomes formed by these lipids. Both the macrocyclic archaeol and caldarchaeol lipids reduced the water, ammonia, urea, and glycerol permeability of liposomes significantly (6-120-fold) compared with diphytanylphosphatidylcholine liposomes. The presence of the ether bond and phytanyl chains did not significantly affect these permeabilities...

...mobility of the midplane hydrocarbon region of the membranes formed by macrocyclic archaeol and caldarchaeol lipids play a significant role in reducing the permeability properties of the lipid membrane. In addition, it appears that substituting ether for ester bonds presents an additional barrier...

DESCRIPTIONS: Membranes; Lipids; Liposomes; Permeability; cellular membranes; glycerolipids; Archaea
...SUBJ CATG: Lipids

DIALOG(R) FILE 24: CSA Life Sciences Abstracts

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0002220333 IP ACCESSION NO: 5139043

Immunization of mice with lipopeptide antigens encapsulated in novel liposomes prepared from the polar lipids of various Archaeobacteria elicits rapid and prolonged specific protective immunity against infection with the facultative intracellular pathogen, *Listeria monocytogenes*

Conlan, JW; Krishnan, L; Willcock, GE; Patel, GB; Spratt, GD
 Institute for Biological Sciences, National Research Council of Canada,
 Room 3065, 100 Sussex Drive, Ottawa, Ont., Canada K1A 0R6,
 [mailto:wayne.conlan@nrc.ca]

Vaccines, v. 19, n. 25-26, p. 3509-3517, May 14, 2001
 PUBLICATION DATE: 2001

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0264-410X

FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Immunology Abstracts
 Immunization of mice with lipopeptide antigens encapsulated in novel
 liposomes prepared from the polar lipids of various
 Archaeobacteria elicits rapid and prolonged specific protective immunity
 against infection with the facultative...

Conlan, JW; Krishnan, L; Willcock, GE; Patel, GB; Spratt, GD

ABSTRACT:

... represent a major advance for clinical vaccinology. The present study examines the activity of novel liposomes, termed archaeosomes, made from the polar lipids of various Archaeobacteria to act as self-adjuvanting vaccine delivery vehicles for such defined acellular...

... prototypical intracellular pathogen. In this regard, all of the tested archaeosomes were superior to conventional liposomes.

DESCRIPTORS: Liposomes; Lymphocytes T; Vaccines; CD8 antigen; archaeosomes; Lipids; Immune response (cell-mediated); Adjuvants; *Listeria monocytogenes*; Archaeobacteria; *Listeria monocytogenes*
 ... SUBJ CATG: Lipids; 06807

3/3, K/6 (Item 6 from file: 24)

DIALOG(R) FILE 24: CSA Life Sciences Abstracts

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0002184047 IP ACCESSION NO: 4851134

The Potent Adjuvant Activity of Archaeosomes Correlates to the Recruitment and Activation of Macrophages and Dendritic Cells In Vivo

Krishnan, L; Sad, S; Patel, GB; Spratt, GD

National Research Council, Institute for Biological Sciences, 100 Sussex Drive, Room 3016, Ottawa, Ontario, K1A 0R6, Canada,
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Journal of Immunology, v. 166, n. 3, p. 1885-1893, February 1, 2001
 PUBLICATION DATE: 2001

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Immunology Abstracts; Bacteriology Abstracts (Microbiology B)

Krishnan, L; Sad, S; Patel, GB; Sprott, GD

ABSTRACT:

... resulted in enhanced expression of MHC class II and B7.2 molecules. In contrast, conventional liposomes made from ester phospholipids failed to modulate the expression of these activation markers. APCs treated...

3/3/K7 (Item 7 from file: 24)

DI ALCG(R) FILE 24: CSA Life Sciences Abstracts

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0002158898 IP ACCESSION NO: 4789414

Archaeosomes Induce Long-Term CD8 super(+) Cytotoxic T Cell Response to Entrapped Soluble Protein by the Exogenous Cytosolic Pathway, in the Absence of CD4 super(+) T Cell Help

Krishnan, L; Sad, S; Patel, GB; Sprott, GD

Institute for Biological Sciences, National Research Council of Canada, 100 Sussex Drive, Room 3016, Ottawa, Ontario, Canada K1A 0R6,

[mailto:lakshmi.krishnan@nrc.ca]

Journal of Immunology, v 165, n 9, p 5177-5185, November 1, 2000

PUBLICATION DATE: 2000

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Immunology Abstracts

Krishnan, L; Sad, S; Patel, GB; Sprott, GD

ABSTRACT:

... 264). In contrast, administration of OVA with aluminum hydroxide or entrapped in conventional ester-phospholipid liposomes failed to evoke significant CTL response. The archaeosome-mediated CD8 super(+) T cell response was...

3/3/K8 (Item 8 from file: 24)

DI ALCG(R) FILE 24: CSA Life Sciences Abstracts

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0002119776 IP ACCESSION NO: 4689447

Influence of Coenzyme Q10 on Tissue Distribution of Archaeosomes, and

Pegylated Archaeosomes, Administered to Mice by Oral and Intravenous Routes

Orr, A; Makabi-Panzu, B; Agnew, BJ; Sprott, GD; Patel, GB

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Journal of Drug Targeting, v 7, n 5, p 383-392, 2000

PUBLICATION DATE: 2000

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 1061-186X

FILE SEGMENT: Medical & Pharmaceutical Biotechnology Abstracts

Orr, A; Makabi-Panzer, B; Agnew, BJ; Sprott, GD; Patel, GB

ABSTRACT:

... The archaeosome formulations were prepared by a reverse-phase evaporation method using the total polar lipids from the archaeobacterium *Methanosc礼cina mazei*. In the case of oral gavage, the most striking observation...

... SUBJ CATG: Drug delivery vehicles (liposomes, cochl eates, microspheres)

3/3, K/9 (item 9 from file: 24)

DI ALCG(R) File 24: CSA Life Sciences Abstracts

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0002057229 IP ACCESSION NO: 4657064

Archaeobacterial Ether Lipid Liposomes (Archaeosomes) as Novel Vaccine and Drug Delivery Systems

Patel, GB; Sprott, GD

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[mailto:girish.patel@nrc.ca]

Critical Reviews in Biotechnology, v 19, n 4, p 317-357, 1999

PUBLICATION DATE: 1999

DOCUMENT TYPE: Journal Article; Review

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0738-8551

FILE SEGMENT: Medical & Pharmaceutical Biotechnology Abstracts

Archaeobacterial Ether Lipid Liposomes (Archaeosomes) as Novel Vaccine and Drug Delivery Systems

Patel, GB; Sprott, GD

ABSTRACT:

Liposomes are artificial, spherical, closed vesicles consisting of one or more lipid bilayer(s). Liposomes made from ester phospholipids have been studied extensively over the last 3 decades as artificial membrane models. Considerable interest has been generated for applications of liposomes in medicine, including their use as diagnostic reagents, as carrier vehicles in vaccine formulations, or...

... The objective of this article is to review the properties and potential applications of novel liposomes made from the membrane lipids of Archaeobacteria (Archaea). These lipids are unique and distinct from those encountered in Eukarya and Bacteria. Polar glycerolipids make up the bulk of the membrane lipids, with the remaining neutral lipids being primarily squalenes and other hydrocarbons. The polar

Lipids consist of regularly branched, and usually fully saturated, phytanyl chains of 20, 25, or 40...

... carbons of the glycerol backbone(s). It has been shown only recently that total polar lipids of archaeobacteria, and purified lipid fractions therefrom can form liposomes. We refer to liposomes made with any lipid composition that includes ether lipids characteristic of Archaeobacteria as archaeosomes to distinguish them from vesicles made from the conventional lipids obtained from eukaryotic or eubacterial sources or their synthetic analogs. In general, archaeosomes demonstrate relatively...

... archaeosomes by phagocytic cells can be up to 50-fold greater than that of conventional liposome formulations. Studies in mice have indicated that systemic administration of several test antigens entrapped within...

... archaeosome formulations indicate that they may offer a superior alternative to the use of conventional liposomes, at least for some biotechnology applications.

DESCRIPTORS: Lipids; Liposomes; Drug delivery; Vaccines; Archaeobacteria; Archaea; Ether lipids

... SUBJ CATG: Drug delivery vehicles (liposomes, cochleates, microspheres); 33000...

3/3, K10 (Item 10 from file: 24)
DI ALCG(R) File 24: CSA Life Sciences Abstracts
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0002053887 IP ACCESSION NO: 4652725

Archaeosome vaccine adjuvants induce strong humoral, cell-mediated, and memory responses: Comparison to conventional liposomes and alum

Krishnan, L; Dicaire, CJ; Patel, GB; Sprott, GD
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[mailto:lakshmi.krishnan@nrc.ca]

Infection and Immunity, v 68, n 1, p 54-63, January 2000
PUBLICATION DATE: 2000

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0019-9567

FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Immunology Abstracts

Archaeosome vaccine adjuvants induce strong humoral, cell-mediated, and memory responses: Comparison to conventional liposomes and alum

Krishnan, L; Dicaire, CJ; Patel, GB; Sprott, GD

ABSTRACT:

Ether glycerol lipids extracted from various archaeobacteria were formulated into liposomes (archaeosomes) possessing strong adjuvant properties. Mice of varying genetic backgrounds, immunized by different parenteral routes...

... those achieved with Freund's adjuvant and considerably more than those with alum or conventional liposomes

(phosphatidylcholine-phosphatidylglycerol-chol esterol, 1:8:0.2:1.5 mol ar ratio). Furthermore, antigen-specific immunoglobulin G1 (IgG1), IgG2a, and IgG2b isotype antibodies were all induced. Association of BSA with the lipid vesicles was required for induction of a strong response, and >80% of the protein was...

...Th1) and interleukin-4 (IL-4) (Th2) by spleen cells *in vitro*. In contrast, conventional liposomes induced little cell-mediated immunity, whereas alum stimulated only an IL-4 response. In contrast to alum and Freund's adjuvant, archaeosomes composed of Thermoplasma acidophilum lipids evoked a dramatic memory antibody response to the encapsulated protein (at approximately 300 days) after...

DESCRIPTIONS: Adjuvants; Immune response (cell-mediated); Immune response (humoral); Liposomes; gamma-interferon; Immunization; Bovine serum albumin; Alum; Archaeosome vaccine; Memory cells; Vaccines; Archaea

3/3, K/11 (Item 11 from file: 24)
DIALCG(R) File 24: CSA Life Sciences Abstracts
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0002001805 IP ACCESSION NO: 4567137
Stability of liposomes prepared from the total polar lipids of Methanoscincus mazaei is affected by the specific salt form of the lipids

Patel, GB; Agnew, BJ; Jarrell, HC; Sprott, GD
Institute for Biological Sciences, National Research Council of Canada, 100 Sussex Drive, Ottawa, Ontario, K1A 0R6, Canada,
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Journal of Liposome Research, v 9, n 2, p 229-245, May 1999
PUBLICATION DATE: 1999

DOCUMENT TYPE: Journal Article

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LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0898-2104

FILE SEGMENT: Medical & Pharmaceutical Biotechnology Abstracts;
Bacteriology Abstracts (Microbiology B)
Stability of liposomes prepared from the total polar lipids of Methanoscincus mazaei is affected by the specific salt form of the lipids

Patel, GB; Agnew, BJ; Jarrell, HC; Sprott, GD

ABSTRACT:

The total polar lipids (TPL) extracted from the archaeobacterium Methanoscincus mazaei were predominantly in the form of sodium and...

...of the divalent cations, magnesium plus calcium decreased from about 11:1 to 2:1. Liposomes (archaeosomes) made from ns-TPL were unable to efficiently retain low molecular weight aqueous markers...

...to about 25% and 100% respectively. Except for some differences in phosphatidylserine and phosphatidylglycerol, the lipid compositions of ns-TPL, s-TPL, and the magnesium form of TPL were similar, as determined by thin layer chromatography of labeled lipids. Archaeosomes prepared from s-TPL and ns-TPL had super(31)P NMR spectra that were similar to each

other, but distinct from those of vesicles prepared from the ester lipid dimyristoylphosphatidylcholine. The types and relative proportions of cations associated with the lipids of *M. mazei* prior to their hydration and vesicle formation have a major influence, although other factors such as lipid composition may have an effect, on the permeability of the bilayer to low molecular weight...

DESCRIPTIONS: Liposomes; Lipids; Methanosarcina mazei;
Methanogenic archaea; Methanosarcina mazei
... SUBJ CATG: Drug delivery vehicles (liposomes, cochlates,
microspheres); 02731...

... Lipids

3/3, K12 (Item 12 from file: 24)
DI ALCG(R) File 24: CSA Life Sciences Abstracts
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0001891728 IP ACCESSION NO: 4403754
Coenzyme Q10 in vesicles composed of archaeal ether lipids or conventional lipids enhances the immuno-adjuvanticity to encapsulated protein

Makabi-Panzu, B; Sprott, GD*; Patel, GB
National Research Council, Institute for Biological Sciences, 100 Sussex Drive, Ottawa, Ontario, Canada K1A 0R6

Vaccine, v 16, n 16, p 1504-1510, October 1998
PUBLICATION DATE: 1998

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0264-410X

FILE SEGMENT: Immunology Abstracts; Medical & Pharmaceutical Biotechnology Abstracts

Coenzyme Q10 in vesicles composed of archaeal ether lipids or conventional lipids enhances the immuno-adjuvanticity to encapsulated protein

Makabi-Panzu, B; Sprott, GD*; Patel, GB

ABSTRACT:

Cytular accumulation, tissue distribution, and immuno-adjuvanticity were evaluated for liposomal CoQ10 prepared from either di stearoyl phosphatidylcholine: di cetoyl phosphate: cholesterol (4:1:5, mol ratio) (conventional liposomes) or from the total polar lipids of the archaeon *Methanosarcina mazei* (archaeosomes). Liposomal CoQ10 vesicles of approximately 100 nm diameter, containing up to 179 μmol of CoQ10 per mg of lipid have been evaluated using J774A.1 macrophages and Balb/c mice. Archaeosomes uptake by J774A.1 macrophages was better than with the conventional liposome, and the incorporation of CoQ10 enhanced the uptake of both lipid vesicle types. All vesicle types were detected in the liver and spleen of mice (4-27% of injected dose) within 3 h of intraperitoneal injection. Moreover, incorporation of CoQ10 into lipid vesicles enhanced the immuno-adjuvanticity of both conventional liposomes and archaeosomes, to achieve approximately a doubling in the titres of BSA-specific antibody in...
... hydrophobicity and opsonization changes induced by the presence of CoQ10

in vesicles. We suggest that liposomal CoQ10 has potential as a new generation of vaccine delivery system to enhance the immune... .

DESCRIPTIONS: Adjutants; Liposomes; Membrane vesicles; Vaccines; Macrophages; coenzyme Q10; Methanosaerica mazel

3/3/K/13 (Item 13 from file: 24)
DIALCG(R) File 24: CSA Life Sciences Abstracts
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0001791080 IP ACCESSION NO: 4209389
Archaeosomes as novel antigen delivery systems

Sprott, GD; Tolson, DL; Patel, GB
Institute for Biological Sciences, National Research Council of Canada, 100 Sussex Drive, Ottawa, Ont. K1A 0R6, Canada

FEMS Microbiology Letters, v 154, n 1, p 17-22, September 1997
PUBLICATION DATE: 1997

PUBLISHER: ELSEVIER SCIENCE B.V.

DOCUMENT TYPE: Journal Article

RECORD TYPE: Citation

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0378-1097

FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Immunology Abstracts

Sprott, GD; Tolson, DL; Patel, GB

DESCRIPTIONS: Vaccines; cholera toxin B; liposomes; archael ether lipids; immune response (humoral); albumin; lipids;
Adjutants; Methanobrevibacter smithii; archaeosomes; Vibrio cholerae;
Methanobrevibacter smithii

3/3/K/14 (Item 14 from file: 24)
DIALCG(R) File 24: CSA Life Sciences Abstracts
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0001787833 IP ACCESSION NO: 4224625
Uptake of archaeobacterial liposomes and conventional liposomes by phagocytic cells

Tolson, DL; Latta, RK; Patel, GB; Sprott, GD
Inst. for Biol. Sci., Natl. Res. Counc. Canada, 100 Sussex Dr., Ottawa, ON K1A 0R6, Canada

Journal of Liposome Research, v 6, n 4, p 755-776, November 1996
PUBLICATION DATE: 1996

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0898-2104

FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Industrial & Applied Microbiology Abstracts (Microbiology A); Medical & Pharmaceutical Biotechnology Abstracts

Uptake of archaeobacterial liposomes and conventional liposomes

by phagocytic cells

Tolson, DL; Latta, RK; Patel, GB; Sprott, GD

ABSTRACT:

Li posomes in the 200 nm size range were prepared from the ether lipids extracted from various Archaeobacteria (coined archaeosomes), and from conventional lipids. The entrapment of peroxidase or carboxyfluorescein was used to compare the *in vitro* uptake of various liposomes by murine peritoneal macrophages, J774A.1 macrophages and several non-phagocytic cell lines. While liposomes composed of ester lipids di palmitoyl phosphatidylcholine, or di myristoyl phosphatidylcholine:cholesterol (1:8:0.2:1.5, molar ratio) were taken...

...cells, using high doses of three representative types of archaeosomes and one type of conventional liposome. Therefore, archaeosomes may be well suited to applications where phagocytic cells are a target site.

DESCRIPTORS: Liposomes; Phagocytosis; Macrophages; Archaeobacteria

...
SUBJ CATG: Drug delivery vehicles (liposomes, colloidal carriers, microspheres)

3/3, K15 (Item 15 from file: 24)
 DI ALCG(R) File 24: CSA Life Sciences Abstracts
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0001751006 IP ACCESSION NO: 4095257
 Structural features of ether lipids in the archaeobacterial
 thermophiles Pyrococcus furiosus, Methanopyrus kandleri, Methanothermus
 fervidus, and Sulfolobus acidocaldarius

Sprott, GD; Agnew, BJ; Patel, GB
 Inst. for Biol. Sci., Natl. Res. Coun. Canada, 100 Sussex Dr., Ottawa, ON
 K1A 0R6, Canada

Canadian Journal of Microbiology/Revue Canadienne de Microbiologie, v 43
 n 5, p 467-476, May 1997
 PUBLICATION DATE: 1997

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English; French

ISSN: 0008-4166

ASFA NO: CS9717783

FILE SEGMENT: Bacteriology Abstracts (Microbiology B)
 Structural features of ether lipids in the archaeobacterial
 thermophiles Pyrococcus furiosus, Methanopyrus kandleri, Methanothermus
 fervidus, and Sulfolobus acidocaldarius

Sprott, GD; Agnew, BJ; Patel, GB

ABSTRACT:

The ether lipids of several thermophilic archaea (archaeobacteria) were compared by negative ion fast atom bombardment mass spectrometry. The major polar lipids in extracts of Pyrococcus furiosus were assigned as archaeol lipids (phosphatidyl glycerol diether, m/z 805; phosphatidyl inositol diether, m/z 893; and diglycosyl diether, m/z 975) and

caldarchoeol lipids (glycosyl phosphatidyl glycerol tetraether, m/z 1778; and glycosyl phosphatidyl inositol tetraether, m/z 1866). The polar lipids of Methanopyrus kandleri were primarily glycolipids consisting of a series of archaeol lipids with one to six hexose units, composed primarily of mannose (mannose: glucose 9:1); phospholipids consisting of archaeol lipids (phosphatidyl inositol diether; and a novel phosphatidylcholine diether, m/z 802.7), and phosphoglycerolipids as minor caldarchoeol lipids (primarily of glycosyl phosphatidyl glycerol tetraether). Methanotermus fervidus extracts contained archaeol lipids (phosphatidyl inositol diether; glycosyl diether; and acetyl of glycosyl diether, m/z 1016), and caldarchoeol lipids (glycosyl phosphatidyl inositol tetraether, m/z 1704; glycosyl phosphatidyl inositol tetraether; and acetyl of glycosyl phosphatidyl inositol tetraether, m/z ...).

... residue occurred commonly in this thermophile and increased as cells entered the stationary growth phase. Lipid extracts of Sulfolobus acidocaldarius contained detectable amounts of archaeol and hydroxyarchaeol analogs of phosphatidyl inositol, phosphatidyl glycerol, and phosphatidyl ethanolamine lipids, in addition to the dominant caldarchoeol lipids already reported. All four thermophiles contained both archaeol and caldarchoeol lipids and phosphoinositol head groups, but no single structural entity uniquely separated their lipids from those found previously in mesophilic archaea. By contrast, extremely halophilic archaea appear to be distinguished from the thermophilic archaea by the presence of a major phosphatidyl glycerol methyl phosphate lipid.

DESCRIPTORS: thermophilic bacteria; halophilic bacteria; Chemical analysis; Biochemistry; Lipids; bacteria; hydrothermal springs; Pyrococcus furiosus; Methanopyrus kandleri; Methanotermus fervidus; Sulfolobus acidocaldarius
IDENTIFIERS: ether lipids; hydrothermal springs; Sulfolobus acidocaldarius; thermophilic bacteria; halophilic bacteria
SUBJ CATG: Lipids

3/3/K16 (Item 16 from file: 24)
DI ALCG(R) File 24: CSA Life Sciences Abstracts
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0001674255 IP ACCESSION NO: 3990014
Heat sterilization of archaeal liposomes

Choquet, OG; Patel, GB; Sprott, GD*
Institute for Biological Sciences, National Research Council of Canada,
Ottawa, ON K1A 0R6, Canada

Canadian Journal of Microbiology/Revue Canadienne de Microbiologie, v 42
n 2, p 183-186, February 1996
PUBLICATION DATE: 1996

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English; French

ISSN: 0008-4166

FILE SEGMENT: Agricultural & Environmental Biotechnology Abstracts

Heat sterilization of archaeal liposomes

Choquet, OG; Patel, GB; Sprott, GD*

ABSTRACT:

Thermal stabilities were compared between liposomes prepared from the ether lipids extracted from various archaeabacteria and liposomes composed of ester lipids. Leakage of entrapped carboxyfluorescein from the liposomes exposed to 121 degree C indicated a marked stability of certain ether liposomes, comparable or superior to cholesterol-stabilized liposomes prepared from the saturated synthetic lipids dimyristoyl phosphatidylcholine and di-myristoyl phosphatidylglycerol. The heat stability of diether liposomes could be increased by the inclusion of tetraether lipids.

DESCRIPTIONS: liposomes; heat treatments; drug delivery; archaeabacteria

IDENTIFIERS: ester lipids; cholesterol

3/3, K17 (Item 17 from file: 24)
DIALCG(R) FILE 24: CSA Life Sciences Abstracts
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0001504595 IP ACCESSION NO: 3760445
Stability of pressure-extruded liposomes made from archaeobacterial ether lipids

Choquet, OG; Patel, GB; Beveridge, TJ; Sprott, GD*
Inst. Biol. Sci., Natl. Res. Coun. Canada (NRC), Ottawa, ON K1A 0R6,
Canada

Applied Microbiology and Biotechnology, v. 42, n. 2-3, p. 375-384, 1994
ADDL. SOURCE INFO: Applied Microbiology and Biotechnology [APPL. M CROBIOL.
BIOTECHNOL.], vol. 42, no. 2-3, pp. 375-384, 1994
PUBLICATION DATE: 1994

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0175-7598

FILE SEGMENT: Agricultural & Environmental Biotechnology Abstracts

Stability of pressure-extruded liposomes made from archaeobacterial ether lipids

Choquet, OG; Patel, GB; Beveridge, TJ; Sprott, GD*

ABSTRACT:

Ether lipids were obtained from a wide range of archaeabacteria grown at extremes of pH, temperature, and salt concentration. With the exception of *Sulfolobus acidocaldarius*, unilamellar and/or multilamellar liposomes could be prepared from emulsions of total polar lipid extracts by pressure extrusion through filters of various pore sizes. Dynamic light scattering, and electron microscopy revealed homogeneous liposome populations with sizes varying from 40 to 230 nm depending on both the lipid source and the pore size of the filters. Leakage rates of entrapped fluorescent or radioactive compounds established that those archaeobacterial liposomes that contained tetraether lipids were the most stable to high temperatures, alkaline pH, and serum proteins. Most ether liposomes were stable to phospholipase A sub(2), phospholipase B and pancreatic lipase. These properties of archaeobacterial liposomes make them attractive for applications in

biotechnology.

DESCRIPTIONS: archaebacteria; liposomes; lipids; Sulfolobus
acidocaldarius

... SUBJ CATG: Lipids and sterols

3/3, K/18 (Item 18 from file: 24)
DI ALCG(R) File 24: CSA Life Sciences Abstracts
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0001491071 IP ACCESSION NO: 3741723
The ether lipids of *Methanoscincus mazaei* and other *Methanoscincus* species, compared by fast atom bombardment mass spectrometry

Sprott, GD; Dicaire, CJ; Patel, GB
Inst. Biol. Sci., Natl. Res. Counc. Canada, Ottawa, ON K1A 0R6, Canada

Canadian Journal of Microbiology/Revue Canadienne de Microbiologie, v. 40 no. 10, p. 837-843, 1994

ADDL. SOURCE INFO: Canadian Journal of Microbiology/Revue Canadienne de Microbiologie [CAN. J. MICROBIOLOGY/REV. CAN. MICROBIOLOGY], vol. 40, no. 10, pp. 837-843, 1994

PUBLICATION DATE: 1994

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English; French

ISSN: 0008-4166

FILE SEGMENT: Bacteriology Abstracts (Microbiology B)

The ether lipids of *Methanoscincus mazaei* and other *Methanoscincus* species, compared by fast atom bombardment mass spectrometry

Sprott, GD; Dicaire, CJ; Patel, GB

ABSTRACT:

The total lipids of *Methanoscincus mazaei* accounted for 4.0% of the cell dry mass, and 90% of these were polar lipids. Nearly all of the polar fraction consisted of diether (2,3-di-O-phytanoyl-sn...

...hydroxydiether analogs of phosphatidylglycerol, phosphatidylinositol, phosphatidylserine, and phosphatidylethanolamine. Several highly fluorescent trace components in the lipid extracts were purified and partially characterized by mass spectrometry. Fast atom bombardment mass spectrometry of total lipid extracts provided data to establish a close relationship among the polar lipids present in *Methanoscincus mazaei*, *Methanoscincus thermophilus*, *Methanoscincus acetylavorans*, *Methanoscincus barkeri* Fusaro, and *Methanoscincus barkeri* MS.

DESCRIPTIONS: lipids; mass spectroscopy; *Methanoscincus mazaei*; *Methanoscincus barkeri*; *Methanoscincus thermophilus*; *Methanoscincus acetylavorans*

... SUBJ CATG: Lipids

3/3, K/19 (Item 19 from file: 24)
DI ALCG(R) File 24: CSA Life Sciences Abstracts
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0001268225 IP ACCESSION NO: 2984633
Hydroxydiether lipid structures in *Methanoscincus* spp. and *Methanococcus voltae*.

Spratt, GD; Dicaire, CJ; Choquet, OG; Patel, GB; Ekel, I
Inst. Biol. Sci., 100 Sussex Dr., Ottawa, ON K1A 0R6, Canada

Applied and Environmental Microbiology, v 59, n 3, p 912-914, 1993
ADDL. SOURCE INFO: Applied and Environmental Microbiology [APPL. ENVIRON.
MICROBIOLOGY], vol. 59, no. 3, pp. 912-914, 1993
PUBLICATION DATE: 1993

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0099-2240

FILE SEGMENT: Bacteriology Abstracts (Microbiology B)

Hydroxylated ether lipid structures in Methanosaerina spp. and
Methanococcus voltae.

Spratt, GD; Dicaire, CJ; Choquet, OG; Patel, GB; Ekel, I

ABSTRACT:

Hydroxylated diether lipids are the most abundant lipids in
Methanosaerina acetylivorans, Methanosaerina thermophila, and Methanosaerina
barkeri MS and Fusaro, regardless of the substrate used for growth.
Structural analysis of the lipid moiety freed of polar head groups
revealed that the hydroxylated ether lipids of all the Methanosaerina
strains were hydroxylated at position 3 of sn-2 phytanyl chains...

DESCRIPTIONS: Lipids; Methanosaerina; Methanococcus voltae

IDENTIFIERS: hydroxylated ether lipids

...SUBJ CATG: Lipids

3/3, K/20 (Item 20 from file: 24)

DI ALCG(R) File 24: CSA Life Sciences Abstracts
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0001263243 IP ACCESSION NO: 2978066

Metabolic pathways in Methanococcus jannaschii and other methanogenic
bacteria.

Spratt, GD; Ekel, I; Patel, GB

Inst. Biol. Sci., Natl. Res. Coun. Canada, 100 Sussex Drive, Ottawa, ON
K1A 0R6, Canada

Applied and Environmental Microbiology, v 59, n 4, p 1092-1098, 1993

ADDL. SOURCE INFO: Applied and Environmental Microbiology [APPL. ENVIRON.
MICROBIOLOGY], vol. 59, no. 4, pp. 1092-1098, 1993
PUBLICATION DATE: 1993

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0099-2240

FILE SEGMENT: Bacteriology Abstracts (Microbiology B)

Spratt, GD; Ekel, I; Patel, GB

ABSTRACT:

10563731a.txt
... reveal onate were incorporated when supplied to the growth medium.
Lysine was preferentially incorporated into the lipid fraction,
suggesting a role as a phytanyl chain precursor.
? e au=krishnan, !?

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E2	113	AU=KRI SHNAN, L. V.
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E5	1	AU=KRI SHNAN, LAKSHM V.
E6	2	AU=KRI SHNAN, LAKSHMY
E7	1	AU=KRI SHNAN, LAKSHMY A.
E8	1	AU=KRI SHNAN, LALI TA
E9	225	AU=KRI SHNAN, LALI THA
E10	1	AU=KRI SHNAN, LATA
E11	2	AU=KRI SHNAN, LATA A
E12	2	AU=KRI SHNAN, LATA A.

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16 AU=KRI SHNAN, L. K.
113 AU=KRI SHNAN, L. V.
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>>>KWC option is not available in file(s): 399

6/3,K/1 (item 1 from file: 24)

DI ALCG(R) File 24: CSA Life Sciences Abstracts

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0003382979 IP ACCESSION NO: 8554484

Archaeosome adjuvants: Immunological capabilities and mechanism(s) of action

Krishnan, Lakshmi ; Spratt, GDennis

National Research Council-Institute for Biological Sciences, Ottawa, ON, Canada K1A 0R6, [mailto:Lakshmi.Krishnan@rc-cnc.gc.ca]

Vaccine, v. 26, n. 17, p. 2043-2055, April 2008

PUBLICATION DATE: 2008

PUBLISHER: Elsevier Science, The Boulevard Langford Lane Kidlington Oxford OX5 1GB UK, [mailto:usinfo@elsevier.com], [URL: http://www.elsevier.nl]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0264-410X

FILE SEGMENT: *Bacteriology Abstracts (Microbiology B); Immunology Abstracts*

Krishnan, Lakshmi; Sprott, GDenniss

ABSTRACT:

Archaeosomes (liposomes comprised of glycerolipids of Archaea) constitute potent adjuvants for the induction of Th1, Th2 and CD8 super(+) T cell responses to the entrapped soluble antigen. Archaeal lipids are uniquely constituted of ether-linked isoprenoid phytanyl cores conferring stability to the membranes. Additionally, varied head groups displayed on the glycerol-lipid cores facilitate unique immunostimulating interactions with mammalian antigen-presenting cells (APCs). The polar lipid from the archaeon, Methanobrevibacter smithii has been well characterized for its adjuvant potential, and is...

...DESCRIPTORS: Antigen presentation; Antigen-presenting cells; CD8 antigen; Cancer; Cytokines; Helper cells; Immunological memory; Infection; Inflammation; Lipids; Liposomes; Lymphocytes T; Major histocompatibility complex; Memory cells; Phospholipids; Serine; Terpenes; Therapeutic applications; Vaccines; phosphatidylserine; Archaea...

6/3, K/2 (Item 2 from file: 24)

DIALOG(R) File 24: CSA Life Sciences Abstracts
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0003014138 I P ACCESSI ON NO: 7289082

Rapidi Cional Expansion and Prolonged Maintenance of Memory CD8 super(+) T Cells of the Effector (CD44 super(high)CD62L super(low)) and Central (CD44 super(high)CD62L super(high)) Phenotype by an Archaeosome Adjuvant Independent of TLR2

Krishnan, Lakshmi; Gurnani, Komal; Dicaire, Chantal J; van Faassen, Henk; Zafer, Ahmed; Kirschning, Carsten J; Sad, Subash; Sprott, GDenniss

National Research Council-Institute for Biological Sciences, Ottawa, Ontario, Canada. Department of Biochemistry, Microbiology, and Immunology, University of Ottawa, Ottawa, Ontario, Canada. Institute for Microbiology, Immunology, and Hygiene, Technical University, Munich, Germany

Journal of Immunology, v 178, n 4, p 2396-2406, February 2007
PUBLICATION DATE: 2007

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike Bethesda MD 20814-3998 USA, [URL: <http://www.jimmunol.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: *Bacteriology Abstracts (Microbiology B); Immunology Abstracts*

Krishnan, Lakshmi; Gurnani, Komal; Dicaire, Chantal J; van Faassen, Henk; Zafer, Ahmed; Kirschning, Carsten J; Sad...

ABSTRACT:

... super(+) T cells were induced in TLR2-deficient mice, suggesting nonengagement of TLR2 by archaeal lipids. Thus, an archaeosome adjuvant vaccine represents an alternative to live vectors for inducing CD8⁺ super...

DESCRIPTIONS: Adjuvants; Antigen presentation; Blood; CD8 antigen; Effector cells; Heterocompatibility antigen H-2; Immunization; Immunological memory; Lipids; Lymphocytes T; Memory cells; Spleen; TLR2 protein; Toll-like receptors; Vaccines; Vesicles; double prime T...

6/3/K/3 (Item 3 from file: 24)
DIALOG(R) File 24: CSA Life Sciences Abstracts
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0002606667 IP ACCESSION NO: 5992116
Activation of Dendritic Cells by Liposomes Prepared from Phosphatidyl Inositol Mannosides from *Mycobacterium bovis* Bacillus Calmette-Guerin and Adjuvant Activity In Vivo

Sprott, GDennis; Dicaire, Chantal J; Gurnani, Komal; Sad, Subash; Krishnan, Lakshmi
Institute for Biological Sciences, National Research Council, Ottawa, Ontario, Canada

Infection and Immunity, v 72, n 9, p 5235-5246, September 2004
PUBLICATION DATE: 2004

PUBLISHER: American Society for Microbiology, 1752 N Street N.W.
Washington, DC 20036 USA, [URL: <http://www.asm.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0019-9567

FILE SEGMENT: Bacteriology Abstracts (Microbiology B)

Activation of Dendritic Cells by Liposomes Prepared from Phosphatidyl Inositol Mannosides from *Mycobacterium bovis* Bacillus Calmette-Guerin and Adjuvant Activity In Vivo

Sprott, GDennis; Dicaire, Chantal J; Gurnani, Komal; Sad, Subash; Krishnan, Lakshmi

ABSTRACT:

Liposome vesicles could be formed at 65 degree C from the chloroform soluble total polar lipids (TPL) extracted from *Mycobacterium bovis* bacillus Calmette-Guerin (BCG). Mice immunized with ovalbumin (OVA) entrapped in TPL liposomes produced both anti-OVA antibody and cytotoxic T lymphocyte responses. Murine bone marrow-derived dendritic...

... 6 (IL-6), IL-12, and tumor necrosis factor upon exposure to antigen-free TPL liposomes. Three phosphoglycerides and three phospholipids comprising 96% of TPL were identified as phosphatidyl inositol di-mannoside, palmitoyl-phosphatidyl inositol di-mannoside, di-palmitoyl-phosphatidyl inositol di-mannoside, phosphatidyl inositol,

phosphatidyl ethanolamine, and cardiolipin. The activation of dendritic cells by liposomes prepared from each purified lipid component of TPL was evaluated *in vitro*. A basal activity of phosphatidyl inositol liposomes to activate proinflammatory cytokine production appeared to be attributable to the tuberculosteric fatty acyl 19:0 chain characteristic of mycobacterial glycerolipids, as similar lipids lacking tuberculosteric chains showed little activity. Phosphatidyl inositol dimannoside was identified as the primary lipid that activated dendritic cells to produce amounts of proinflammatory cytokines several times higher than the...

...induction levels of IL-6 and IL-12. Further, OVA entrapped in palmitoyl-phosphatidyl inositol dimannoside liposomes was delivered to dendritic cells for major histocompatibility complex class I presentation more effectively than TPL OVA-liposomes. BOG liposomes containing mannose lipids caused up-regulation of costimulatory molecules and CD40. Thus, the inclusion of pure phosphatidyl inositol dimannosides of BOG in lipid vesicle vaccines represents a simple and efficient option for targeting antigen delivery and providing immune...

DESCRIPTIONS: Dendritic cells; Liposomes; Immunization; BOG phosphoglycerolipids; phosphatidyl inositol; phosphatidyl ethanolamine; cardiolipin; immune response; Interleukin 6; Interleukin 12; Tumor necrosis factor...

6/3, K/4 (Item 4 from file: 24)
DIALCG(R) File 24: CSA Life Sciences Abstracts
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0002592371 IP ACCESSION NO: 5946009
Phosphatidyl serine Receptor-Mediated Recognition of Archaeosome Adjuvant Promotes Endocytosis and MHC Class I Cross-Presentation of the Entrapped Antigen by Phagosome-to-Golgi Transport and Classical Processing

Gurnani, Koral; Kennedy, Jessica; Sad, Subash; Sprott, GDennis;
Kri shnan, Lakshmi
National Research Council of Canada, Institute for Biological Sciences,
Ottawa, Ontario, Canada

Journal of Immunology, v 173, n 1, p 566-578, July 1, 2004
PUBLICATION DATE: 2004

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike Bethesda MD 20814-3998 USA, [URL: <http://www.jimmunol.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Immunology Abstracts

Gurnani, Koral; Kennedy, Jessica; Sad, Subash; Sprott, GDennis;
Kri shnan, Lakshmi

ABSTRACT:

... Ag. We analyzed the processing pathway of OVA entrapped in archaeosomes composed of *Methanobrevibacter smithii* lipids, high in arachidyl serine (OVA-archaeosomes). In vitro, OVA-archaeosomes stimulated spleen cells from OVA-TCR...

... or FcRs lacked effect, indicating specific recognition of the arachidyl serine head group of M smithii lipids by APCs. In addition, inhibitors of endosomal acidification blocked MHC class I processing of OVA...

6/3, K/5 (Item 1 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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148305999 CA: 148(14)305999x CONFERENCE PROCEEDING

Archaeosome vaccine adjuvants for cross-priming CD8+ T-cell immunity

AUTHOR(S): Krishnan, Lakshmi; Sprott, G. Dennis

LOCATI ON: Institute for Biological Sciences, National Research Council of Canada, Ottawa, ON, Can.

JOURNAL: Vaccine Adjuvants Delivery Syst. (Vaccine Adjuvants and Delivery Systems) EDITOR: Singh, Manrohan (Ed.), DATE: 2007 PAGES: 263-294

CODEN: 69KEQD LANGUAGE: English PUBLISHER: John Wiley & Sons, Inc., Hoboken, NJ

6/3, K/6 (Item 2 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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147449032 CA: 147(21)449032d PATENT

Syntetic archaeal glycerolipid adjuvant s

INVENTOR/AUTHOR: Sprott, Dennis; Whiffeld, Dennis; Krishnan, Lakshmi

LOCATI ON: Can.

ASSIGNEE: National Research Council of Canada

PATENT: PCT International ; WO 2007112567 A1 DATE: 20071011

APPLI CATI ON: WO 2007CA530 (20070330) *US 2006PV787170 (20060330) *US 2006PV791225 (20060412)

PAGES: 96pp. CODEN: PI XXD2 LANGUAGE: English

PATENT CLASS/IFI CATI ON:

I PCF/ 8 + Level	Val ue	Position	St at us	Versi on	Action	Source	Office:
C07H 0015/ 04	A	I	F	B	20060101	H	CA
A61K 0039/ 39	A	I	L	B	20060101	H	CA
A61K-0047/ 24	A	I	L	B	20060101	H	CA
A61K-0047/ 26	A	I	L	B	20060101	H	CA
A61K-0047/ 28	A	I	L	B	20060101	H	CA
A61K-0009/ 127	A	I	L	B	20060101	H	CA
A61P-0031/ 00	A	I	L	B	20060101	H	CA
A61P-0035/ 00	A	I	L	B	20060101	H	CA
A61P-0037/ 04	A	I	L	B	20060101	H	CA
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; SV; SY; TJ; TM; TN; TR; TT; TZ; UA; UG							
DESIGNATED REGIONAL: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LT; LU; LV; MC; MT; NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW							
AM; AZ; BY; KG; KZ; MD; RU; TJ; TM							

6/3, K/7 (Item 3 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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146204273 CA: 146(11)204273 JOURNAL

Partial Clonal Expansion and Prolonged Maintenance of Memory CD8+ T Cells

10563731a.txt

of the Effector (CD44ighCD62L1ow) and Central (CD44ighCD62Lhi gh)
Phenotype by an Archaeosome Adjuvant Independent of TLR2
AUTHOR(S): Krishnan, Lakshmi; Gurmani, Koral; Dicaiare, Chantal J.; van
Faassen, Henk; Zafer, Ahmed; Kirschning, Carsten J.; Sad, Subash; Sprott,
G. Dennis
LOCATION: Institute for Biological Sciences, National Research Council,
Ottawa, ON, Can.,
JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2007 VOLUME: 178
NUMBER: 4 PAGES: 2396-2406 CODEN: JOMA3 ISSN: 0022-1767 LANGUAGE:
English PUBLISHER: American Association of Immunologists

6/3, K/8 (Item 4 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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141230412 CA: 141(14)230412v JOURNAL
Archaeosomes as Self-Adjuvanting Delivery Systems for Cancer Vaccines
AUTHOR(S): Krishnan, Lakshmi; Sprott, G. Dennis
LOCATION: Inst. Biol. Sci., Natl. Res. Council Canada, Ottawa, ON, Can.,
K1A 0R6
JOURNAL: J. Drug Targeting (Journal of Drug Targeting) DATE: 2003
VOLUME: 11 NUMBER: 8-10 PAGES: 515-524 CODEN: JDTAEH ISSN: 1061-186X
LANGUAGE: English PUBLISHER: Taylor & Francis Ltd.

6/3, K/9 (Item 5 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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141155579 CA: 141(10)155579z JOURNAL
Archaeobacterial ether lipid liposomes as vaccine adjuvants
AUTHOR(S): Sprott, G. Dennis; Patel, G. Krishchandra B.; Krishnan, Lakshmi
LOCATION: Institute for Biological Sciences, National Research Council of
Canada, Ottawa, ON, Can., K1A 0R6
JOURNAL: Methods Enzymol. (Methods in Enzymology) DATE: 2003 VOLUME:
373 NUMBER: Liposomes, Part C PAGES: 155-172 CODEN: MENZAU ISSN:
0076-6879 LANGUAGE: English PUBLISHER: Elsevier

6/3, K/10 (Item 6 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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139394847 CA: 139(26)394847a JOURNAL
Archaeosomes varying in lipid composition differ in receptor-mediated
endocytosis and differentially adjuvant immune responses to entrapped
antigen
AUTHOR(S): Sprott, G. Dennis; Sad, Subash; Fleming, L. Perry; Dicaiare,
Chantal J.; Patel, G. Krishchandra B.; Krishnan, Lakshmi
LOCATION: Institute for Biological Sciences, National Research Council,
Ottawa, ON, Can., K1A 0R6
JOURNAL: Archaea (Archaea) DATE: 2003 VOLUME: 1 NUMBER: 3 PAGES:
151-164 CODEN: ARCHCI ISSN: 1472-3646 LANGUAGE: English PUBLISHER:
Heron Publishing

6/3, K/11 (Item 7 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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139115967 CA: 139(8)115967b JOURNAL
Archaeosomes Induce Enhanced Oxytetracycline T Lymphocyte Responses to

Entrapped Soluble Protein in the Absence of Interleukin 12 and Protect against Tumor Challenge
 AUTHOR(S): Krishnan, Lakshmi; Sad, Subash; Patel, Krishchandra B.;
 Sprott, G. Dennis
 LOCATION: Institute for Biological Sciences, National Research Council of Canada, Ottawa, ON, Can. K1A 0R6
 JOURNAL: Cancer Res. (Cancer Research) DATE: 2003 VOLUME: 63 NUMBER: 10 PAGES: 2526-2534 CODEN: CNREAS ISSN: 0008-5472 LANGUAGE: English
 PUBLISHER: American Association for Cancer Research

6/3/K 12 (Item 8 from file: 399)
 (DIALOG(R) File 399; CA SEARCH(R))
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138152262 CA: 138(11)152262T PATENT
 Vaccine adjuvant properties of liposomes formed at elevated temperatures from the polar chloriform extractable lipids from *Mycobacterium bovis* BCG
 INVENTOR(AUTHOR): Sprott, G. Dennis; Krishnan, Lakshmi; Sad, Subash
 LOCATION: Can.
 ASSIGNEE: National Research Council of Canada
 PATENT: PCT International; WO 200311336 A2 DATE: 20030213
 APPLICATI ON: WO 2002CA1217 (20020802) *US PV309512 (20010803)
 PAGES: 46 pp. CODEN: PI XXD2 LANGUAGE: English
 PATENT CLASSIFICATION:
 CLASS: A61K-039/39A; A61K-009/127B; A61P-037/04B; A61P-035/00B
 DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ;
 CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; ES; FI; GB; GD; GE; GH;
 GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; LZ; LC; LK; LR; LS; LT; LU;
 LV; MA; MD; MG; MN; MW; MX; MZ; NO; NZ; OM; PH; PL; PT; RO; RU; SD; SE;
 SG; SI; SK; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VN; YU; ZA; ZM; ZW
 AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESGNATED REGIONAL: GH; GM; KE; LS; MV
 ; MZ; SD; SL; SZ; TZ; UG; ZM; ZW AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES;
 FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; SK; TR; BF; BJ; CF; CG; CI; CM;
 GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG

6/3/K 13 (Item 9 from file: 399)
 (DIALOG(R) File 399; CA SEARCH(R))
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134294515 CA: 134(21)294515U PATENT
 Archaeosomes as immunomodulating carriers for cellular vaccines to induce cytotoxic T lymphocyte (CTL) responses and protect the vaccinated host against intracellular pathogens and cancer
 INVENTOR(AUTHOR): Sprott, G. Dennis; Krishnan, Lakshmi; Conlan, J. Wayne;
 Omri, Abdel; Patel, Krishchandra B.
 LOCATION: Can.
 ASSIGNEE: National Research Council of Canada
 PATENT: PCT International; WO 200126683 A2 DATE: 20010419
 APPLICATI ON: WO 2000CA1197 (20001012) *US PV158944 (19991012) *US
 PV209988 (20000608)
 PAGES: 98 pp. CODEN: PI XXD2 LANGUAGE: English
 PATENT CLASSIFICATION:
 CLASS: A61K-039/39A; A61K-039/00B; A61K-039/02B; A61K-009/127B;
 A61P-031/04B; A61P-031/12B; A61P-035/00B
 DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ;
 CA; CH; CN; CR; CU; CZ; DE; DK; DM; DZ; EE; ES; FI; GB; GD; GE; GH; GM;
 HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; LZ; LC; LK; LR; LS; LT; LU;
 LV; MA; MD; MG; MN; MW; MX; MZ; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI;
 SK; SL; TJ; TM; TR; TT; TZ; UA; UG; UZ; VN; YU; ZA; ZW AM AZ; BY; KG; KZ;
 MD; RU; TJ; TM DESGNATED REGIONAL: GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZW
 ; AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE;

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BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML; MR; NE; SN; TD; TG

6/3, K/14 (Item 10 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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134251017 CA: 134(18)251017 JOURNAL

The potent adjuvant activity of archaeosomes correlates to the recruitment and activation of macrophages and dendritic cells *in vivo*

AUTHOR(S): Krishnan, Lakshmi; Sad, Subash; Patel, Krishchandra B.;

Sprott, G. Dennis

LOCATION: Institute for Biological Sciences, National Research Council of Canada, Ottawa, ON, Can., K1A 0R6

JOURNAL: J. Immunol., DATE: 2001 VOLUME: 166 NUMBER: 3 PAGES:

1885-1893 CODEN: JOIMA3 ISSN: 0022-1767 LANGUAGE: English PUBLISHER:

American Association of Immunologists

6/3, K/15 (Item 11 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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132136166 CA: 132(11)136166 JOURNAL

Archaeosome vaccine adjuvants induce strong humoral, cell-mediated, and memory responses: comparison to conventional liposomes and alum

AUTHOR(S): Krishnan, Lakshmi; Di Caire, Chantal J.; Patel, Krishchandra

B.; Sprott, G. Dennis

LOCATION: Institute for Biological Sciences, National Research Council of Canada, Ottawa, ON, Can., K1A 0R6

JOURNAL: Infect. Immun., DATE: 2000 VOLUME: 68 NUMBER: 1 PAGES: 54-63

CODEN: INFIMB ISSN: 0019-9567 LANGUAGE: English PUBLISHER: American

Society for Microbiology

6/3, K/16 (Item 1 from file: 91)

DI ALCG(R) File 91: MANTS(TM)

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00268401

Development of viper-venom antibodies in chicken egg yolk and assay of their antigen binding capacity.

MAYA DEVI, C.; VASANTHA BAI, M.; KRISHNAN, L.K.;

TOXICON July 2002 (20020700), Vol. 40, pp 657-61

ISSN: 0041-0101

MAYA DEVI, C.; VASANTHA BAI, M.; KRISHNAN, L.K.;

...from eggs. The isolation is very simple and involves only two steps, namely, removal of lipids from the diluted egg yolk followed by gel filtration. Each egg produces 80-100mg of...

6/3, K/17 (Item 1 from file: 149)

DI ALCG(R) File 149: TGG Health&Wellness DB(SM)

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03115914 SUPPLIER NUMBER: 158235080 (USE FORMAT 7 OR 9 FOR FULL TEXT

)
Adult stem cell homing and differentiation *in vitro* on composite fibrin matrix. (Author abstract)

Sreerakha, P.R.; Divya, P.; Krishnan, L.K.

Cell Proliferation, 39, 4, 301(12)

August,

2006

DOCUMENT TYPE: Author abstract PUBLICATION FORMAT: Magazine/Journal

ISSN: 0960-7722 LANGUAGE: English RECORD TYPE: Abstract

TARGET AUDIENCE: Academic

... Krishnan, L. K.

... AUTHOR ABSTRACT: mRNA for and immunostaining the cells for von Willebrand factor, uptake of acetylated low-density lipoproteins and measurement of released nitric oxide in the culture medium as nitrite. The specific molecules...
 ? e au=sad, subash?

Ref	Items	Index-term
E1	1	AU=SAD, SAUM TRA
E2	76	AU=SAD, SUBASH
E3	0	*AU=SAD, SUBASH?
E4	2	AU=SAD I A
E5	1	AU=SAD YKHOV, F. S.
E6	32	AU=SADA
E7	98	AU=SADA A
E8	4	AU=SADA A I
E9	2	AU=SADA A K A
E10	3	AU=SADA A M
E11	69	AU=SADA A.
E12	1	AU=SADA AI

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1	AU=SAD, SAUM TRA
76	AU=SAD, SUBASH
0	AU=SAD, SUBASH?

S7 77 E1-E3

? rd

>>>Duplicate detection is not supported for File 393.

>>>Duplicate detection is not supported for File 391.

>>>Records from unsupported files will be retained in the RD set.
 S8 54 RD (unique items)

? t s8/3, k/1-54

>>>KWC option is not available in file(s): 399

8/3, K/1 (item 1 from file: 24)
 DiALCG(R) File 24: CSA Life Sciences Abstracts
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0003248421 IP ACCESSION NO: 8201012

Pathogen Proliferation Governs the Magnitude but Compromises the Function of CD8 T Cells

Sad, Subash; Dudani, Renu; Gurnani, Komal; Russell, Marsha; van Faassen, Henk; Finlay, Brett; Krishnan, Lakshmi
 National Research Council-Institute for Biologics Sciences, Ottawa, Ontario, Department of Biochemistry, Microbiology and Immunology, University of Ottawa, Ottawa, Ontario, Department of Microbiology and Immunology, University of British Columbia, Vancouver, British Columbia, Canada

Journal of Immunology, v 180, n 9, p 5853-5861, May 1, 2008

Page 28

PUBLICATION DATE: 2008

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike
Bethesda MD 20814-3998 USA, [URL: <http://www.jimmunol.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

ELECTRONIC ISSN: 1550-6606

FILE SEGMENT: **Bacteriology Abstracts (Microbiology B); Immunology Abstracts**

Sad, Subash; Dudani, Renu; Gurnani, Komal; Russell, Marsha; van Faassen, Henk; Finlay, Brett; Krishnan, Lakshmi

8/3, K/2 (Item 2 from file: 24)

DI ALGCR File 24: CSA Life Sciences Abstracts

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0003182065 IP ACCESSION NO: 8039705

Mutation in the Fas Pathway Impairs CD8 super(+) T Cell Memory

Dudani, Renu; Russell, Marsha; van Faassen, Henk; Krishnan, Lakshmi;
Sad, Subash
National Research Council of Canada, Institute for Biological Sciences,
Ottawa, Ontario, Canada

Journal of Immunology, v 180, n 5, p 2933-2941, March 1, 2008

PUBLICATION DATE: 2008

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike
Bethesda MD 20814-3998 USA, [URL: <http://www.jimmunol.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: **Immunology Abstracts**

Dudani, Renu; Russell, Marsha; van Faassen, Henk; Krishnan, Lakshmi;
Sad, Subash

8/3, K/3 (Item 3 from file: 24)

DI ALGCR File 24: CSA Life Sciences Abstracts

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0003114700 IP ACCESSION NO: 7743355

Pregnancy Impairs the Innate Immune Resistance to *Salmonella typhimurium*
Leading to Rapid Fatal Infection

Pejicic-Karapetrovic, Branka; Gurnani, Komal; Russell, Marsha S; Finlay, Brett; Sad, Subash; Krishnan, Lakshmi
National Research Council-Institute for Biological Sciences, Ottawa, Ontario, Canada. Department of Biochemistry, Microbiology, and Immunology, University of Ottawa, Ottawa, Ontario, Canada. Michael Smith Laboratories, University of British Columbia, Vancouver, British Columbia, Canada

Journal of Immunology, v 179, n 9, p 6088-6096, November 1, 2007

PUBLICATION DATE: 2007

10563731a.txt
PUBLISHER: American Association of Immunologists, 9650 Rockville Pike
Bethesda MD 20814-3998 USA, [URL: <http://www.jimmunol.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Immunology Abstracts

Pejicic-Karapetrovic, Branka; Gurnani, Komal; Russell, Marsha S; Finlay, Brett; Sad, Subash; Krishnan, Lakshmi

8/3, K/4 (Item 4 from file: 24)

DIALOG(R) File 24: CSA Life Sciences Abstracts

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0003014138 IP ACCESSION NO: 7289082

Regional Expansion and Prolonged Maintenance of Memory CD8 super(+) T Cells of the Effector (CD44 super(hi) CD62L super(low)) and Central (CD44 super(hi) CD62L super(hi)) Phenotype by an Archaeosome Adjuvant Independent of TLR2

Krishnan, Lakshmi; Gurnani, Komal; Dicaire, Chantal J; van Faassen, Henk; Zafar, Ahmed; Kirschning, Carsten J; Sad, Subash; Sprott, GDenniss

National Research Council-Institute for Biological Sciences, Ottawa, Ontario, Canada. Department of Biochemistry, Microbiology, and Immunology, University of Ottawa, Ottawa, Ontario, Canada. Institute for Microbiology, Immunology, and Hygiene, Technical University, Munich, Germany

Journal of Immunology, v 178, n 4, p 2396-2406, February 2007

PUBLICATION DATE: 2007

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike
Bethesda MD 20814-3998 USA, [URL: <http://www.jimmunol.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Immunology Abstracts

Krishnan, Lakshmi; Gurnani, Komal; Dicaire, Chantal J; van Faassen, Henk; Zafar, Ahmed; Kirschning, Carsten J; Sad, Subash; Sprott, GDenniss

8/3, K/5 (Item 5 from file: 24)

DIALOG(R) File 24: CSA Life Sciences Abstracts

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0002984978 IP ACCESSION NO: 7129075

Delayed Expansion and Contraction of CD8 super(+) T Cell Response during Infection with Virulent Salmonella typhimurium

Luu, Rachel A; Gurnani, Komal; Dudani, Renu; Karmaria, Rajagopal; van Faassen, Henk; Sirard, Jean-Claude; Krishnan, Lakshmi; Sad, Subash; Laboratory of Cellular Immunology, National Research Council-Institute for Biological Sciences, Ontario, Canada. Institut National de la Santé et de la Recherche Médicale, Institut de Biologie, Campus Pasteur Lille, Lille,

10563731a.txt
France. Department of Biochemistry, Microbiology, and Immunology,
University of Ottawa, Ontario, Canada

Journal of Immunology, v 177, n 3, p 1516-1525, August 1, 2006
PUBLICATION DATE: 2006

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike
Bethesda MD 20814-3998 USA, [URL: http://www.jimmunol.org/]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Bacteriology Abstracts (Microbiology); Immunology Abstracts

... A; Gurmani, Komal; Dudani, Renu; Karmara, Rajagopal; van Faassen, Henk; Sirard, Jean-Claude; Krishnan, Lakshmi; Sad, Subash

8/3/K/6 (item 6 from file: 24)

DAI ALCG(R) File 24: CSA Life Sciences Abstracts

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0002841244 IP ACCESSION NO: 6932929

Apoptotic Vesicles Crossprime CD8 T Cells and Protect against Tuberculosis

Wnau, Florian; Weber, Stephan; Sad, Subash; De Diego, Juana;
Hoops, Silvia Locatelli; Breden, Bernadette; Sandhoff, Konrad;
Brinkmann, Volker; Kaufmann, Stefan HE; Schaike, Ulrich E
Department of Immunology, Max-Planck-Institute for Infection Biology,
Scharnweberstrasse 21-22, 10117 Berlin, Germany,
[mailto:w.nau@mpib-berlin.mpg.de]

Immunity, v 24, n 1, p 105-117, 2006

PUBLICATION DATE: 2006

PUBLISHER: Cell Press, 1100 Massachusetts Avenue Cambridge MA 02138 USA,
[mailto:subs@cell.com], [URL: http://www.cellpress.com]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 1074-7613

FILE SEGMENT: Bacteriology Abstracts (Microbiology); Immunology Abstracts

Wnau, Florian; Weber, Stephan; Sad, Subash; De Diego, Juana;
Hoops, Silvia Locatelli; Breden, Bernadette; Sandhoff, Konrad;
Brinkmann, Volker; Kaufmann, Stefan...

8/3/K/7 (item 7 from file: 24)

DAI ALCG(R) File 24: CSA Life Sciences Abstracts

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0002800467 IP ACCESSION NO: 6662144

Impaired Protection against Mycobacterium bovis Bacillus Calmette-Guerin
Infection in IL-15-Deficient Mice

Saito, Kimiko; Yajima, Toshiaki; Kumabe, Shinobu; Doi, Takehiko; Yamada, Hirosaka; Sad, Subash; Shen, Hao; Yoshihiko, Yasunobu
Division of Host Defense, Medical Institute of Bioregulation, Kyushu

10563731a.txt

University, Fukuoka, Japan. Laboratory of Cellular Immunology, Institute for Biological Sciences, National Research Council of Canada, Ottawa, Ontario, Canada. Department of Microbiology, School of Medicine, University of Pennsylvania, Philadelphia, PA 19104

Journal of Immunology, v 176, n 4, p 2496-2504, February 2006
PUBLICATION DATE: 2006

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike Bethesda MD 20814-3998 USA, [URL: http://www.jimmunol.org/]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Immunology Abstracts; Bacteriology Abstracts (Microbiology B)

Saito, Kimiko; Yajima, Toshiaki; Kumabe, Shinobu; Doi, Takehiko; Yamada, Hisakata; Sad, Subash; Shen, Hao; Yoshihiko, Yasunobu

8/3, K/8 (Item 8 from file: 24)

DI ALG(R) File 24: CSA Life Sciences Abstracts

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0002779077 IP ACCESSION NO: 6577999

IL-15 Regulates CD8 super(+) T Cell Contraction during Primary Infection

Yajima, Toshiaki; Yoshihara, Kazufumi; Nakazato, Kenji; Kumabe, Shinobu; Koyasu, Shigeo; Sad, Subash; Shen, Hao; Kuwano, Hiroyuki; Yoshihiko, Yasunobu

Division of Host Defense, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan. First Department of Surgery, Gunma University School of Medicine, Maebashi, Japan. Department of Microbiology and Immunology, Keio University School of Medicine, Tokyo, Japan. Laboratory of Cellular Immunology, Institute for Biological Sciences, National Research Council of Canada, Ontario, Canada. Department of Microbiology, School of Medicine, University of Pennsylvania, Philadelphia, PA 19104

Journal of Immunology, v 176, n 1, p 507-515, January 1, 2006
PUBLICATION DATE: 2006

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike Bethesda MD 20814-3998 USA, [URL: http://www.jimmunol.org/]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Immunology Abstracts

Yajima, Toshiaki; Yoshihara, Kazufumi; Nakazato, Kenji; Kumabe, Shinobu; Koyasu, Shigeo; Sad, Subash; Shen, Hao; Kuwano, Hiroyuki; Yoshihiko, Yasunobu

8/3, K/9 (Item 9 from file: 24)

DI ALG(R) File 24: CSA Life Sciences Abstracts

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0002723132

IP ACCESSION NO: 6275568

Page 32

10563731a.txt

Reducing the Stimulation of CD8 super(+) T Cells during Infection with Intracellular Bacteria Promotes Differentiation Primarily into a Central (CD62L super(high) CD44 super(high)) Subset

van Faassen, Henk; Saldanha, Marsha; Gilbertson, Deanna; Dudani, Renu; Krishnan, Lakshmi; Sad, Subash
Laboratory of Cellular Immunology, Institute for Biological Sciences, National Research Council of Canada, Ottawa, Ontario, Canada

Journal of Immunology, v 174, n 9, p 5341-5350, May 1, 2005
PUBLICATION DATE: 2005

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike Bethesda MD 20814-3998 USA, [URL: <http://www.jimmunol.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Immunology Abstracts

van Faassen, Henk; Saldanha, Marsha; Gilbertson, Deanna; Dudani, Renu; Krishnan, Lakshmi; Sad, Subash

8/3, K/10 (Item 10 from file: 24)
DIALCG(R) File 24: CSA Life Sciences Abstracts
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0002664024 IP ACCESSION NO: 6190482
A Novel Role of IL-15 in Early Activation of Memory CD8 super(+) CTL after Reinfeciton

Yajima, Toshiaki; Nishimura, Hitoshi; Sad, Subash; Shen, Hao;
Kuwano, Hiroyuki; Yoshihiko, Yasunobu
Division of Host Defense, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan

Journal of Immunology, v 174, n 6, p 3590-3597, March 15, 2005
PUBLICATION DATE: 2005

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike Bethesda MD 20814-3998 USA, [URL: <http://www.jimmunol.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Immunology Abstracts; Bacteriology Abstracts (Microbiology B)
Yajima, Toshiaki; Nishimura, Hitoshi; Sad, Subash; Shen, Hao;
Kuwano, Hiroyuki; Yoshihiko, Yasunobu

8/3, K/11 (Item 11 from file: 24)
DIALCG(R) File 24: CSA Life Sciences Abstracts
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0002606667 IP ACCESSION NO: 5992116
Activation of Dendritic Cells by Liposomes Prepared from Phosphatidyl inositol Mannosides from Mycobacterium bovis Bacillus Calmette-Guerin and Adjuvant Activity In Vivo

Sprott, GDenni s; Dicai re, Chantal J; Gurnani, Komal; Sad, Subash;
Krishnan, Lakshmi
Institute for Biological Sciences, National Research Council, Ottawa,
Ontario, Canada

Infection and Immunity, v 72, n 9, p 5235-5246, September 2004
PUBLICATION DATE: 2004

PUBLISHER: American Society for Microbiology, 1752 N Street N.W.
Washington, DC 20036 USA, [URL: <http://www.asm.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0019-9567

FILE SEGMENT: Bacteriology Abstracts (Microbiology B)

Sprott, GDenni s; Dicai re, Chantal J; Gurnani, Komal; Sad, Subash;
Krishnan, Lakshmi

8/3, K12 (Item 12 from file: 24)
DIALCG(R) File 24: CSA Life Sciences Abstracts
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0002592371 IP ACCESSION NO: 5946009

Phosphatidyl Serine Receptor-Mediated Recognition of Archaeosome Adjuvant
Promotes Endocytosis and MHC Class I Cross-Presentation of the Entrapped
Antigen by Phagosome-to-Cytosol Transport and Classical Processing

Gurnani, Komal; Kennedy, Jessica; Sad, Subash; Sprott, GDenni s;
Krishnan, Lakshmi
National Research Council of Canada, Institute for Biological Sciences,
Ottawa, Ontario, Canada

Journal of Immunology, v 173, n 1, p 566-578, July 1, 2004
PUBLICATION DATE: 2004

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike
Bethesda MD 20814-3998 USA, [URL: <http://www.jimmunol.org/>]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

FILE SEGMENT: Immunology Abstracts

Gurnani, Komal; Kennedy, Jessica; Sad, Subash; Sprott, GDenni s;
Krishnan, Lakshmi

8/3, K13 (Item 1 from file: 41)
DIALCG(R) File 41: Pollution Abstracts
(c) 2009 CSA. All rts. reserv.

0000311396 IP ACCESSION NO: 7463375

A Reduced Antigen Load In Vivo, Rather Than Weak Inflammation, Causes a
Substantial Delay in CD8 super (+) T Cell Priming against Mycobacterium
bovis (Bacillus Calmette-Guerin)

10563731a.txt

Russell, Marsha S; Iskandar, Monica; Mykytczuk, Oksana L; Nash, John HE; Krishnan, Lakshmi; Sad, Subash
National Research Council - Institute for Biological Sciences and Department of Biochemistry, Microbiology, and Immunology, University of Ottawa, Ottawa, Ontario, Canada

Journal of Immunology, v. 179, n. 1, p. 211-220, July 1, 2007
PUBLICATION DATE: 2007

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike Bethesda MD 20814-3998 USA, [URL: http://www.jimmunol.org/]

DOCUMENT TYPE: Journal Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

ISSN: 0022-1767

Russell, Marsha S; Iskandar, Monica; Mykytczuk, Oksana L; Nash, John HE; Krishnan, Lakshmi; Sad, Subash

8/3, K/14 (Item 1 from file: 143)
DI ALCG(R) File 143: Biol. & Agric. Index
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1844483 H.W. WILSON RECORD NUMBER: BBAI 05117035
A Novel Role of IL-15 in Early Activation of Memory CD8+ CTL after Reinfeciton
Yajima, Toshiaki
Nishimura, Hiroshi; Sad, Subash
Journal of Immunology v. 174 no6 (March 15 2005) p. 3590-7
ISSN: 0022-1767

... Sad, Subash

8/3, K/15 (Item 2 from file: 143)
DI ALCG(R) File 143: Biol. & Agric. Index
(c) 2009 The HW Wilson Co. All rts. reserv.

1306149 H.W. WILSON RECORD NUMBER: BBAI 01007647
The potent adjuvant activity of archaeosomes correlates to the recruitment and activation of macrophages and dendritic cells in vivo
Krishnan, Lakshmi
Sad, Subash; Patel, B. Krishchandra
Journal of Immunology v. 166 no3 (Feb. 1 2001) p. 1885-93
DOCUMENT TYPE: Feature Article ISSN: 0022-1767

Sad, Subash...

8/3, K/16 (Item 3 from file: 143)
DI ALCG(R) File 143: Biol. & Agric. Index
(c) 2009 The HW Wilson Co. All rts. reserv.

1276814 H.W. WILSON RECORD NUMBER: BBAI 00061612
Archaeosomes induce long-term CD8+ cytotoxic T cell response to entrapped soluble protein by the exogenous cytosolic pathway, in the absence of CD4+ T cell help
Krishnan, Lakshmi
Sad, Subash; Patel, B. Krishchandra
Journal of Immunology v. 165 no9 (Nov. 1 2000) p. 5177-85

DOCUMENT TYPE: Feature Article ISSN: 0022-1767
10563731a.txt

Sad, Subash...

8/3, K/17 (Item 4 from file: 143)
DI ALCG(R) File 143: Biol. & Agric. Index
(c) 2009 The HW Wilson Co. All rts. reserv.

1116630 H.W. WILSON RECORD NUMBER: BBAI 99056974
Cytokine deprivation of naïve CD8+ T cells prompts minimal cell cycling but maximal cytokine synthesis and autonomous proliferation subsequently: a mechanism of self-regulation

Sad, Subash

Krishnan, Lakshmi

Journal of Immunology v. 163 no5 (Sept. 1 1999) p. 2443-51
DOCUMENT TYPE: Feature Article ISSN: 0022-1767

Sad, Subash

8/3, K/18 (Item 5 from file: 143)
DI ALCG(R) File 143: Biol. & Agric. Index
(c) 2009 The HW Wilson Co. All rts. reserv.

0735770 H.W. WILSON RECORD NUMBER: BBAI 97043159
Cytokine-deficient CD8+ Tc1 cells induced by IL-4. Retained inflammation and perforin and Fas cytotoxicity but compromised long term killing of tumor cells

Sad, Subash

Li, Li; Mbsmann, Tim R

Journal of Immunology v. 159 (July 15 '97) p. 606-13
DOCUMENT TYPE: Feature Article ISSN: 0022-1767

Sad, Subash

8/3, K/19 (Item 6 from file: 143)
DI ALCG(R) File 143: Biol. & Agric. Index
(c) 2009 The HW Wilson Co. All rts. reserv.

0707466 H.W. WILSON RECORD NUMBER: BBAI 97029013
CD8Tc1 and Tc2 cells secrete distinct cytokine patterns in vitro and in vivo but induce similar inflammatory reactions

Li, Li

Sad, Subash; Kagi, David

Journal of Immunology v. 158 (May 1 '97) p. 4152-61
DOCUMENT TYPE: Feature Article ISSN: 0022-1767

Sad, Subash...

8/3, K/20 (Item 7 from file: 143)
DI ALCG(R) File 143: Biol. & Agric. Index
(c) 2009 The HW Wilson Co. All rts. reserv.

0687949 H.W. WILSON RECORD NUMBER: BBAI 94048220
Single IL-2-secreting precursor CD4 T cell can develop into either Th1 or Th2 cytokine secretion phenotype

Sad, Subash

Mbsmann, Tim R

Journal of Immunology v. 153 (Oct. 15 '94) p. 3514-22
DOCUMENT TYPE: Feature Article ISSN: 0022-1767

Sad, Subash

8/3/K 21 (Item 1 from file: 399)
 DI ALCG(R) FILE 399: CA SEARCH(R)
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151356301 CA: 151(16) 356301h JOURNAL
 Selectively Reduced Intracellular Proliferation of *Salmonella enterica*
 Serovar Typhimurium within APCs Limits Antigen Presentation and
 Development of a Rapid CD8+ T Cell Response
 AUTHOR(S): Al baghdadi, Homayn; Robinson, Nirmal; Finlay, Brett; Krishnan,
 Lakshmi; Sad, Subash
 LCCATI ON: National Research Council - Institute for Biological Sciences,
 Ottawa, ON, Can.,
 JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2009 VOLUME: 183
 NUMBER: 6 PAGES: 3778-3787 CODEN: JOMA3 ISSN: 0022-1767 LANGUAGE:
 English PUBLISHER: American Association of Immunologists

8/3/K 22 (Item 2 from file: 399)
 DI ALCG(R) FILE 399: CA SEARCH(R)
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151006435 CA: 151(1) 6435d JOURNAL
 Intracellular Bacterial Vectors That Induce CD8+ T Cells with Similar
 Cytolytic Abilities but Distinctive Memory Phenotypes Provide Contrasting
 Tumor Protection
 AUTHOR(S): Stark, Felicity C.; Sad, Subash; Krishnan, Lakshmi
 LCCATI ON: Department of Biochemistry, Microbiology and Immunology,
 University of Ottawa and National Research Council-Institute for Biological
 Sciences, Ottawa, ON, Can.,
 JOURNAL: Cancer Res. (Cancer Research) DATE: 2009 VOLUME: 69 NUMBER:
 10 PAGES: 4327-4334 CODEN: CNREAB ISSN: 0008-5472 LANGUAGE: English
 PUBLISHER: American Association for Cancer Research

8/3/K 23 (Item 3 from file: 399)
 DI ALCG(R) FILE 399: CA SEARCH(R)
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149244073 CA: 149(11) 244073n JOURNAL
 IFN-gamma. Induces the Erosion of Preexisting CD8 T Cell Memory during
 Infection with a Heterologous Intracellular Bacterium
 AUTHOR(S): Dudani, Renu; Murali-Krishna, Kaja; Krishnan, Lakshmi; Sad, Subash
 LCCATI ON: National Research Council-Institute for Biological Sciences,
 Ottawa, ON, Can.,
 JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2008 VOLUME: 181
 NUMBER: 3 PAGES: 1700-1709 CODEN: JOMA3 ISSN: 0022-1767 LANGUAGE:
 English PUBLISHER: American Association of Immunologists

8/3/K 24 (Item 4 from file: 399)
 DI ALCG(R) FILE 399: CA SEARCH(R)
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148469937 CA: 148(21) 469937b JOURNAL
 Mutation in the Fas Pathway Impairs CD8+ T Cell Memory
 AUTHOR(S): Dudani, Renu; Russell, Marsha; van Faassen, Henk; Krishnan,
 Lakshmi; Sad, Subash
 LCCATI ON: National Research Council of Canada, Institute for Biological
 Page 37

Sciences, Ottawa, ON, Can.,

JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2008 VOLUME: 180
 NUMBER: 5 PAGES: 2933-2941 CODEN: JOIMM3 ISSN: 0022-1767 LANGUAGE:
 English PUBLISHER: American Association of Immunologists

8/3, K/25 (Item 5 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)
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148305994 CA: 148(14) 305994s CONFERENCE PROCEEDING

Antigen processing and presentation

AUTHOR(S): Sad, Subash

LCCATI ON: Institute for Biological Sciences, National Research Council of Canada, Ottawa, ON, Can.,

JOURNAL: Vaccine Adjuvants Delivery Syst. (Vaccine Adjuvants and Delivery Systems) EDITOR: Singh, Manmohan (Ed.) DATE: 2007 PAGES: 33-52 CODEN: 69KEQD LANGUAGE: English PUBLISHER: John Wiley & Sons, Inc., Hoboken, NJ

8/3, K/26 (Item 6 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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147070598 CA: 147(4) 70598d JOURNAL

A Reduced Antigen Load In Vivo, Rather Than Weak Inflammation, Causes a Substantial Delay in CD8+ T Cell Priming against Mycobacterium bovis (Bacillus Calmette-Guerin)

AUTHOR(S): Russell, Marsha S.; Iskandar, Mbnica; Myktyczuk, Oksana L.; Nash, John H. E.; Krishnan, Lakshmi; Sad, Subash

LCCATI ON: National Research Council - Institute for Biological Sciences, University of Ottawa, Ottawa, ON, Can.,

JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2007 VOLUME: 179
 NUMBER: 1 PAGES: 211-220 CODEN: JOIMM3 ISSN: 0022-1767 LANGUAGE:

English PUBLISHER: American Association of Immunologists

8/3, K/27 (Item 7 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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146204273 CA: 146(11) 204273j JOURNAL

Rapid Clonal Expansion and Prolonged Maintenance of Memory CD8+ T Cells of the Effector (CD44highCD62Llow) and Central (CD44highCD62Lhigh) Phenotype are an Archaeosome Adjuvant Independent of TLR2

AUTHOR(S): Krishnan, Lakshmi; Gurnani, Komal; Dicaire, Chantal J.; van Faassen, Henk; Zafer, Ahmed; Kirschning, Carsten J.; Sad, Subash; Sprott, G. Dennis

LCCATI ON: Institute for Biological Sciences, National Research Council, Ottawa, ON, Can.,

JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2007 VOLUME: 178
 NUMBER: 4 PAGES: 2396-2406 CODEN: JOIMM3 ISSN: 0022-1767 LANGUAGE:

English PUBLISHER: American Association of Immunologists

8/3, K/28 (Item 8 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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145122983 CA: 145(7) 122983f JOURNAL

Delayed Expansion and Contraction of CD8+ T Cell Response during Infection with Virulent Salmonella typhimurium

AUTHOR(S): Luu, Rachel A.; Gurnani, Komal; Daudani, Renu; Karmara,

Raj agopal ; van Faassen, Henk; Sirard, Jean-Claude; Krishnan, Lakshmi ; Sad, Subash

LOCATION: Laboratory of Cellular Immunology, National Research

Council-Institute for Biological Sciences, ON, Can.

JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2006 VOLUME: 177

NUMBER: 3 PAGES: 1516-1525 CODEN: JOIMAS ISSN: 0022-1767 LANGUAGE:

English PUBLISHER: American Association of Immunologists

8/3, K/29 (Item 9 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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144086336 CA: 144(6) 86336r JOURNAL

IL-15 Regulates CD8+ T Cell Contraction during Primary Infection

AUTHOR(S): Yajima, Toshiaki; Yoshihara, Kazufumi; Nakazato, Kenji; Kurabe, Shino; Koyasu, Shigeo; Sad, Subash; Shen, Hao; Kuwano, Hiroyuki; Yoshihiko, Yasunobu

LOCATION: Division of Host Defense, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan, 812-8582

JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2005 VOLUME: 176

NUMBER: 1 PAGES: 507-515 CODEN: JOIMAS ISSN: 0022-1767 LANGUAGE: English MEETING DATE: 20060000 PUBLISHER: American Association of Immunologists

8/3, K/30 (Item 10 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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140285850 CA: 140(18) 285850w JOURNAL

Prolonged Antigen Presentation, APC-, and CD8+ T Cell Turnover during Mycobacterial Infection: Comparison with *Listeria monocytogenes*

AUTHOR(S): van Faassen, Henk; Dudani, Renu; Krishnan, Lakshmi ; Sad, Subash

LOCATION: Institute for Biological Sciences, Laboratory of Cellular Immunology, National Research Council of Canada, Ottawa, ON, Can.

JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2004 VOLUME: 172

NUMBER: 6 PAGES: 3491-3500 CODEN: JOIMAS ISSN: 0022-1767 LANGUAGE: English PUBLISHER: American Association of Immunologists

8/3, K/31 (Item 11 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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139394847 CA: 139(26) 394847a JOURNAL

Archaeosomes varying in lipid composition differ in receptor-mediated endocytosis and differentially adjuvant immune responses to entrapped antigen

AUTHOR(S): Spratt, G. Dennis; Sad, Subash; Fleming, L. Perry; Dicaline, Chantal J.; Patel, Krishchandra B.; Krishnan, Lakshmi

LOCATION: Institute for Biological Sciences, National Research Council, Ottawa, ON, Can., K1A 0R6

JOURNAL: Archaea (Archaea) DATE: 2003 VOLUME: 1 NUMBER: 3 PAGES: 151-164 CODEN: ARCHCI ISSN: 1472-3646 LANGUAGE: English PUBLISHER: Heron Publishing

8/3, K/32 (Item 12 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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139394612 CA: 139(26) 394612v JOURNAL
Increased CD8+ T Cell Memory to Concurrent Infection at the Expense of
Increased Erosion of Pre-existing Memory: The Paradoxical Role of IL-15.
AUTHOR(S): Chapdelaine, Yvan; Smith, Dean K.; Pedras-Vasconcelos, Joao A.; Krishnan, Lakshmi; Sad, Subash.
LOCATION: Institute for Biological Sciences, Laboratory of Cellular Immunology, National Research Council of Canada, Ottawa, ON, Can., K1A 0R6
JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2003 VOLUME: 171
NUMBER: 10 PAGES: 5454-5460 CODEN: JOIMAS ISSN: 0022-1767 LANGUAGE:
English PUBLISHER: American Association of Immunologists

8/3, K/33 (Item 13 from file: 399)
DI ALCG(R) File 399: CA SEARCH(R)
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139290659 CA: 139(19) 290659z JOURNAL
Maintenance and attrition of T-cell memory
AUTHOR(S): Sad, Subash; Krishnan, Lakshmi
LOCATION: Institute for Biological Sciences, National Research Council of Canada, Ottawa, ON, Can.
JOURNAL: Crit. Rev. Immunol. (Critical Reviews in Immunology) DATE: 2003
VOLUME: 23 NUMBER: 1 & 2 PAGES: 129-147 CODEN: CRIIDE ISSN: 1040-8401
LANGUAGE: English PUBLISHER: Begell House, Inc.

8/3, K/34 (Item 14 from file: 399)
DI ALCG(R) File 399: CA SEARCH(R)
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139115967 CA: 139(8) 115967b JOURNAL
Archaeosomes Induce Enhanced Cytotoxic T Lymphocyte Responses to
Entrapped Soluble Protein in the Absence of Interleukin 12 and Protect
against Tumor Challenge
AUTHOR(S): Krishnan, Lakshmi; Sad, Subash; Patel, Girishchandra B.; Sprott, G. Dennis
LOCATION: Institute for Biological Sciences, National Research Council of Canada, Ottawa, ON, Can., K1A 0R6
JOURNAL: Cancer Res. (Cancer Research) DATE: 2003 VOLUME: 63 NUMBER: 10 PAGES: 2526-2534 CODEN: CNREAB ISSN: 0008-5472 LANGUAGE: English
PUBLISHER: American Association for Cancer Research

8/3, K/35 (Item 15 from file: 399)
DI ALCG(R) File 399: CA SEARCH(R)
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139067771 CA: 139(5) 67771j PATENT
Differential induction, maintenance and regulation of CD8+ T cell
response against a model antigen expressed by an acute versus a chronic
intracellular bacterium
INVENTOR(AUTHOR): Sad, Subash; Chapdelaine, Yvan; Smith, Dean K.; Dudani, Renu
LOCATION: Can.,
ASSIGNEE: National Research Council of Canada
PATENT: PCT International ; WO 200353459 A2 DATE: 20030703
APPLICATI ON: WO 2002CA1892 (20021210) *US PV337146 (20011210)
PAGES: 36 pp. CODEN: PI XXD2 LANGUAGE: English
PATENT CLASSIFI CATI ONS:
CLASS: A61K-038/20A; A61K-038/17B; A61K-035/74B
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ;
CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; ES; FI; GB; GD; GE; GH;
GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU;

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LV; MA; MD; MG; MK; MN; MW; MK; MZ; NO; NZ; OM; PH; PL; PT; RO; RU; SC; SD;
SE; SG; SK; SL; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA; ZM;
ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESIGNATED REGIONAL: GH; GM; KE; LS;
MW; MZ; SD; SL; SZ; TZ; UG; ZM; ZW; AT; BE; BG; CH; CY; CZ; DE; DK; EE;
ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; SI; SK; TR; BF; BJ; CF; CG;
CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG

8/3, K/36 (Item 16 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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138152262 CA: 138(11)1522621 PATENT

Vaccine adjuvant properties of liposomes formed at elevated temperatures from the polar chloroform extractable lipids from *Mycobacterium bovis* BCG INVENTOR(AUTHOR): Sprott, G. Dennis; Krishnam, Lakshmi; Sad, Subash LOCATI ON: Can.,

ASSIGNEE: National Research Council of Canada

PATENT: PCT International; WO 200311336 A2 DATE: 20030213

APPLI CATI ON: WO 2002CA1217 (20020802) *US PV309512 (20010803)

PAGES: 46 pp. CODEN: PI XXD2 LANGUAGE: English

PATENT CLASSIFI CATI ONS:

CLASS: A61K-039/39A; A61K-009/127B; A61P-037/04B; A61P-035/00B

DESIGNATED COUNTRY ES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ;
CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; ES; FI; GB; GD; GE; GH;
GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU;
LV; MA; MD; MG; MK; MN; MW; MZ; NO; NZ; OM; PH; PL; PT; RO; RU; SD; SE;
SG; SI; SK; SL; SZ; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VN; YU; ZA; ZM; ZW;
AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESIGNATED REGIONAL: GH; GM; KE; LS; MW;
MZ; SD; SL; SZ; TZ; UG; ZM; ZW; AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES;
FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; SK; TR; BF; BJ; CF; CG; CI; CM;
GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG

8/3, K/37 (Item 17 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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137167890 CA: 137(12)167890Z JOURNAL

Cross-reactive antigen is required to prevent erosion of established T cell memory and tumor immunity: a heterologous bacterial model of attrition

AUTHOR(S): Smith, Dean K.; Dudani, Renu; Pedras-Vasconcelos, Joao A.; Chapdelaine, Yvan; Van Faassen, Henk; Sad, Subash

LOCATI ON: Laboratory of Cellular Immunology, Institute for Biological Sciences, National Research Council, Ottawa, ON, Can.,

JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2002 VOLUME: 169

NUMBER: 3 PAGES: 1197-1206 CODEN: JCI MA3 ISSN: 0022-1767 LANGUAGE: English PUBLISHER: American Association of Immunologists

8/3, K/38 (Item 18 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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137139243 CA: 137(10)139243X JOURNAL

Mycobacterium bovis BCG infected mice are more susceptible to staphylococcal enterotoxin B-mediated toxic shock than uninfected mice despite reduced *in vitro* splenocyte responses to superantigens

AUTHOR(S): Pedras-Vasconcelos, Joao A.; Chapdelaine, Yvan; Dudani, Renu; Van Faassen, Henk; Smith, Dean K.; Sad, Subash

LOCATI ON: Laboratory of Cellular Immunology, Institute for the Biological Sciences, National Research Council, Ottawa, ON, Can., K1A 0R6

JOURNAL: Infect. Immun. (Infection and Immunity) DATE: 2002 VOLUME: 70
 NUMBER: 8 PAGES: 4148-4157 CODEN: INFIBR ISSN: 0019-9567 LANGUAGE:
 English PUBLISHER: American Society for Microbiology

8/3, K/39 (Item 19 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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137062116 CA: 137(5) 62116y JOURNAL

Multiple mechanisms compensate to enhance tumor-protective CD8+ T cell response in the long-term despite poor CD8+ T cell priming initially: comparison between an acute versus a chronic intracellular bacterium expressing a model antigen

AUTHOR(S): Dudani, Renu; Chappelaine, Yvan; Van Faassen, Henk; Smith, Dean K.; Shen, Hao; Krishnan, Lakshmi; Sad, Subash

LC CATION: Laboratory of Cellular Immunology, Institute for Biological Sciences, National Research Council, Ottawa, ON, Can., K1A 0R6

JOURNAL: J. Immunol. (Journal of Immunology) DATE: 2002 VOLUME: 168
 NUMBER: 11 PAGES: 5737-5745 CODEN: JOIMAS ISSN: 0022-1767 LANGUAGE:
 English PUBLISHER: American Association of Immunologists

8/3, K/40 (Item 20 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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136339120 CA: 136(22) 339120w JOURNAL

Preexisting inflammation due to Mycobacterium bovis BCG infection differentially modulates T-cell priming against a replicating or nonreplicating immunogen

AUTHOR(S): Dudani, Renu; Chappelaine, Yvan; Van Faassen, Henk; Smith, Dean K.; Shen, Hao; Krishnan, Lakshmi; Sad, Subash

LC CATION: Laboratory of Cellular Immunology, Institute for Biological Sciences, National Research Council, Ottawa, ON, Can., K1A 0R6

JOURNAL: Infect. Immun. DATE: 2002 VOLUME: 70 NUMBER: 4 PAGES: 1957-1964 CODEN: INFIBR ISSN: 0019-9567 LANGUAGE: English PUBLISHER: American Society for Microbiology

8/3, K/41 (Item 21 from file: 399)

DI ALCG(R) File 399: CA SEARCH(R)

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134161879 CA: 134(12) 161879u PATENT

Novel strategy for carbohydrate-based therapeutic vaccines

INVENTOR/AUTHOR: Jennings, Harold J.; Sad, Subash; Guo, Zhongnu; Li, Tianmin; Yang, Qilin

LC CATION: Can.,

ASSIGNEE: National Research Council of Canada

PATENT: PCT International ; WO 200109298 A2 DATE: 20010208

APPLICANT/CN: WO 2000CA886 (20000728) "CA 2279134 (19990729)

PAGES: 25 pp. CODEN: PI XXD2 LANGUAGE: English

PATENT CLASSIFICATION:

CLASS: C12N 015/00A

DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ;
 CA; CH; CN; CR; CU; CZ; DE; DK; DM; DZ; EE; ES; FI; GB; GD; GE; GH; GM; HR;
 HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; LZ; LC; LK; LR; LS; LT; LU; LV; MA;
 MD; MG; MK; MN; MW; MX; MZ; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL;
 TJ; TM; TR; TT; TZ; UA; UG; UZ; VN; YU; ZA; ZW AM; AZ; BY; KG; KZ; MD; RU;
 TJ; TM DESIGNATED REGIONAL: GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZW
 : AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE;
 BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML; MR; NE; SN; TD; TG

8/3/K 42 (Item 22 from file: 399)
 DI ALCG(R) FILE 399: CA SEARCH(R)
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134040804 CA: 134(4)40804g JOURNAL
 Biochemical engineering of surface aliphatic-2-8 polyisalic acid for
 immunargeting tumor cells
 AUTHOR(S): Liu, Tianmin; Guo, Zhongwu; Yang, Qiangling; Sad, Subash;
 Jennings, Harold J.
 LOCATION: Institute for Biological Sciences, National Research Council of
 Canada, Ottawa, ON, Can., K1A 0R6
 JOURNAL: J. Biol. Chem. DATE: 2000 VOLUME: 275 NUMBER: 42 PAGES:
 32832-32836 CODEN: JBCHA3 ISSN: 0021-9258 LANGUAGE: English PUBLISHER:
 American Society for Biochemistry and Molecular Biology

8/3/K 43 (Item 23 from file: 399)
 DI ALCG(R) FILE 399: CA SEARCH(R)
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127246923 CA: 127(18)246923 JOURNAL
 Differentiation and functions of T cell subsets
 AUTHOR(S): Msmann, Tim R.; Li, Li; Hengartner, Hans; Kagi, David; Fu,
 Wayne; Sad, Subash
 LOCATION: Department of Medical Microbiology and Immunology, University
 of Alberta, Edmonton, Can.,
 JOURNAL: Cell Biol. Symp. DATE: 1997 VOLUME: 204 NUMBER: 161
 Basis of Cellular Defence Mechanisms PAGES: 148-158 CODEN: CIBSB4 ISSN:
 0300-5208 LANGUAGE: English PUBLISHER: Wiley

8/3/K 44 (Item 24 from file: 399)
 DI ALCG(R) FILE 399: CA SEARCH(R)
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127120355 CA: 127(9)120355g JOURNAL
 Functions of CD8 T-cell subsets secreting different cytokine patterns
 AUTHOR(S): Msmann, Tim R.; Sad, Subash
 LOCATION: Department of Medical Microbiology and Immunology, 632D
 Heritage Medical Research Centre, University of Alberta, Edmonton, AB, Can.
 T6H 2Z2
 JOURNAL: Semin. Immunol. DATE: 1997 VOLUME: 9 NUMBER: 2 PAGES: 87-92
 CODEN: SEMI2 ISSN: 1044-5323 LANGUAGE: English PUBLISHER: Academic

8/3/K 45 (Item 25 from file: 399)
 DI ALCG(R) FILE 399: CA SEARCH(R)
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127048989 CA: 127(4)48989x JOURNAL
 Cytotoxicity and weak CD40 ligand expression of CD8+ type 2 cytotoxic T
 cells restricts their potential B cell helper activity
 AUTHOR(S): Sad, Subash; Krishnan, Lakshmi; Blackley, R. Chris; Kagi,
 David; Hengartner, Hans; Msmann, Tim R.
 LOCATION: Department of Medical Microbiology and Immunology, University Alberta,
 Edmonton, AB, Can.,
 JOURNAL: Eur. J. Immunol. DATE: 1997 VOLUME: 27 NUMBER: 4 PAGES:
 914-922 CODEN: EJIMAF ISSN: 0014-2890 LANGUAGE: English PUBLISHER: VCH

DI ALGO(R) FILE 399: CA SEARCH(R)
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125273312 CA: 125(21)273312z JOURNAL
 Perforin and Fas killing by CD8+ T cells limit their cytokine synthesis and proliferation
 AUTHOR(S): Sad, Subash; Kagi, David; Mosmann, Tim R.
 LOCATI ON: Dep. Medical Microbiology Immunology, University Alberta, Edmonton, Can., T6G 2H7
 JOURNAL: J. Exp. Med. DATE: 1996 VOLUME: 184 NUMBER: 4 PAGES: 1543-1547 CODEN: JEMEA ISSN: 0022-1007 LANGUAGE: English

8/3, K/47 (Item 27 from file: 399)
 DI ALGO(R) FILE 399: CA SEARCH(R)
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125139867 CA: 125(11)139867f JOURNAL
 Differentiation of subsets of CD4+ and CD8+ T cells
 AUTHOR(S): Mosmann, Tim R.; Sad, Subash; Krishnan, Lakshmi; Wegmann, Tom G.; Quillardet, Larry J.; Belosevic, Mke
 LOCATI ON: Department Immunology, University Alberta, Edmonton, AB, Can., T6H 2H7
 JOURNAL: Clin Found. Symp. DATE: 1995 VOLUME: 195 NUMBER: T Cell I
 Subsets in Infectious and Autoimmune Diseases PAGES: 42-54 CODEN: CLBSB4
 ISSN: 0300-5208 LANGUAGE: English

8/3, K/48 (Item 28 from file: 399)
 DI ALGO(R) FILE 399: CA SEARCH(R)
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124199789 CA: 124(15)199789w JOURNAL
 The expanding universe of T-cell subsets: Th1, Th2 and more
 AUTHOR(S): Mosmann, Tim R.; Sad, Subash
 LOCATI ON: Dept. Medical Microbiology Immunology, Univ. Alberta, Edmonton, AB, Can., T6G 2H7
 JOURNAL: Immunol. Today DATE: 1996 VOLUME: 17 NUMBER: 3 PAGES: 138-46
 CODEN: IMTOD8 ISSN: 0167-4919 LANGUAGE: English

8/3, K/49 (Item 29 from file: 399)
 DI ALGO(R) FILE 399: CA SEARCH(R)
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123283376 CA: 123(21)283376w JOURNAL
 Interleukin (IL) 4, in the absence of antigen stimulation, induces an anergy-like state in differentiated CD8+ TCI cells: loss of IL-2 synthesis and autonomous proliferation but retention of cytotoxicity and synthesis of other cytokines
 AUTHOR(S): Sad, Subash; Mosmann, Tim R.
 LOCATI ON: Dep. Med. Microbiol. Immunol., Univ. Alberta, Edmonton, Can., T6G 2H7
 JOURNAL: J. Exp. Med. DATE: 1995 VOLUME: 182 NUMBER: 5 PAGES: 1505-15
 CODEN: JEMEA ISSN: 0022-1007 LANGUAGE: English

8/3, K/50 (Item 30 from file: 399)
 DI ALGO(R) FILE 399: CA SEARCH(R)
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122312708 CA: 122(25)312708t JOURNAL
 Characterization of an immunosuppressive factor secreted by a human
 Page 44

10563731a.txt
trophoblast-derived choriocarcinoma cell line
AUTHOR(S): Krishnan, Lakshmi; Sad, Subash; Raghupathy, Raj
LOCATION: Immunogenetics Lab., National Inst. Immunol., New Delhi, 110067
India
JOURNAL: Cell. Immunol. DATE: 1995 VOLUME: 162 NUMBER: 2 PAGES:
295-308 CODEN: CLIMB8 ISSN: 0008-8749 LANGUAGE: English

8/3, K/51 (Item 31 from file: 399)
DI ALCG(R) File 399: CA SEARCH(R)
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122237713 CA: 122(19) 237713k JOURNAL
Cytokine-induced differentiation of precursor mouse CD8+ T cells into
cytotoxic CD8+ T cells secreting Th1 or Th2 cytokines
AUTHOR(S): Sad, Subash; Marcotte, Rita; Moesmann, Tim R.
LOCATION: Department Immunology, University of Alberta, Edmonton, AB,
Canada
JOURNAL: Immunity DATE: 1995 VOLUME: 2 NUMBER: 3 PAGES: 271-9
CODEN: IMMUEH ISSN: 1074-7613 LANGUAGE: English

8/3, K/52 (Item 32 from file: 399)
DI ALCG(R) File 399: CA SEARCH(R)
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120104362 CA: 120(9) 104362g JOURNAL
Synthetic gonadotropin-releasing hormone (GnRH) vaccines incorporating
GnRH and synthetic T-helper epitopes
AUTHOR(S): Sad, Subash; Chauhan, V.S.; Arunan, K.; Raghupathy, Raj
LOCATION: Natl. Inst. Immunol., New Delhi, India
JOURNAL: Vaccine DATE: 1993 VOLUME: 11 NUMBER: 11 PAGES: 1145-50
CODEN: VACOEE ISSN: 0264-410X LANGUAGE: English

8/3, K/53 (Item 33 from file: 399)
DI ALCG(R) File 399: CA SEARCH(R)
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115110360 CA: 115(11) 110360t JOURNAL
Organization and chromosomal localization of beta-tubulin genes in
Leishmania donovani
AUTHOR(S): Sad, Saumitra; Adhya, Samit
LOCATION: Leishmania Group, Indian Inst. Chem. Biol., Calcutta, 700 032,
India
JOURNAL: J. Biosci. DATE: 1990 VOLUME: 15 NUMBER: 4 PAGES: 239-48
CODEN: JIBSDN ISSN: 0250-5991 LANGUAGE: English

8/3, K/54 (Item 34 from file: 399)
DI ALCG(R) File 399: CA SEARCH(R)
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115106492 CA: 115(11) 106492v JOURNAL
Influence of the genetic background and carrier protein on the antibody
response to GnRH
AUTHOR(S): Sad, Subash; Talwar, G.P.; Raghupathy, Raj
LOCATION: Natl. Inst. Immunol., New Delhi, 110067, India
JOURNAL: J. Reprod. Immunol. DATE: 1991 VOLUME: 19 NUMBER: 2 PAGES:
197-207 CODEN: JRIIMD ISSN: 0165-0378 LANGUAGE: English
? s (lip? or liposom?) and (polar or fraction or chromatag? or extract? or separat at?
or sol ub?)
Processing

Processed 10 of 56 files ...
 Processing
 Processed 20 of 56 files ...
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 Processed 30 of 56 files ...
 Compiled processing all files
 6244416 LTP?
 366990 LI POSOMP
 766560 POLAR
 2532715 FRACTI ON
 171 CHROMATAG?
 5783831 EXTRACT?
 6883589 SEPARAT?
 2720157 SOLUB?
 S9 864532 (LI P? OR LI POSOMP) AND (POLAR OR FRACTI ON OR CHROMATAG?
 OR EXTRACT? OR SEPARAT? OR SOLUB?)
 ? s s9 and (Mycobac? or (bcg or bovi s))
 864532 S9
 645888 MYCOBAC?
 147327 BOG
 103950 BOVI S
 S10 8125 S9 AND (MYCOBAC? OR (BOG OR BOVI S))
 ? s s10 and (mannoside or manno?)
 8125 S10
 10056 MANNOSI DE
 312247 MANNO?
 S11 665 S10 AND (MANNOSI DE OR MANNO?)
 ? s s11 and (chl or of or n)
 665 S11
 229026 CHLOROFORM
 S12 36 S11 AND (CHLOROFORM)
 ? rd

>>>Duplicate detection is not supported for File 393.

>>>Duplicate detection is not supported for File 391.

>>>Records from unsupported files will be retained in the RD set.

S13 14 RD (unique items)

? t s13/3,k/1-14

>>>KWC option is not available in file(s): 399

13/3,K/1 (Item 1 from file: 5)

DI ALCG(R) FILE: 5: Biosis Previews(R)
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18055063 BIOSIS NO.: 200400425852

Activation of dendritic cells by liposomes prepared from
 phosphatidylinositol mannosides from Mycobacterium

bovis bacillus Calmette-Guerin and adjuvant activity in vivo

AUTHOR: Sprott G Dennis (Reprint); Dicaire Chantal J; Gurnani Kornal; Sad
 Subash; Krishnan Lakshmi

AUTHOR ADDRESS: Inst Biol Sci, Natl Res Council Canada, 100 Sussex Dr,
 Ottawa, ON, K1A 0R6, Canada**Canada

AUTHOR E-MAIL ADDRESS: dennis.sprott@irc-cnrc.gc.ca

JOURNAL: Infection and Immunity 72 (9): p5235-5246 September 2004 2004

MEDLINE print

ISSN: 0019-9567_(ISSN print)

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

phosphatidyl inositol mannosides from *Mycobacterium bovis* bacillus Calmette-Guerin and adjuvant activity in vivo

ABSTRACT: Liposome vesicles could be formed at 65 degree C from the chloroform soluble total polar lipids (TPL) extracted from *Mycobacterium bovis* bacillus Calmette-Guerin (BCG). mice immunized with ovalbumin (OVA) entrapped in TPL liposomes produced both anti-OVA antibody and cytotoxic T lymphocyte responses. Murine bone marrow-derived dendritic...

...6 (IL-6), IL-12, and tumor necrosis factor upon exposure to antigen-free TPL liposomes. Three phosphoglycerolipids and three phospholipids comprising 96% of TPL were identified as phosphatidyl inositol dimannoside, palmitoyl-phosphatidyl inositol dimannoside, phosphatidyl inositol, phosphatidylethanolamine, and cardiolipin. The activation of dendritic cells by liposomes prepared from each purified lipid component of TPL was evaluated in vitro. A basal activity of phosphatidyl inositol liposomes to activate proinflammatory cytokine production appeared to be attributable to the tubercular ester fatty acyl 19:0 chain characteristic of mycobacterial glycerolipids, as similar lipids lacking tubercular ester chains showed little activity. Phosphatidyl inositol dimannoside was identified as the primary lipid that activated dendritic cells to produce amounts of proinflammatory cytokines several times higher than the basal level, indicating the importance of mannose residues. Although the activity of phosphatidyl inositol dimannoside was little influenced by palmitoylation of mannose at C-6, a further palmitoylation at inositol C-3 diminished the induction levels of IL-6 and IL-12. Further, OVA entrapped in palmitoyl-phosphatidyl inositol dimannoside liposomes was delivered to dendritic cells for major histocompatibility complex class I presentation more effectively than TPL OVA-liposomes. BCG liposomes containing mannose lipids caused up-regulation of costimulatory molecules and CD40. Thus, the inclusion of pure phosphatidyl inositol mannosides of BCG in lipid vesicle vaccines represents a simple and efficient option for targeting antigen delivery and providing immune...

DESCRIPTIONS:

- ... BI SYSTEMATIC NAMES: *Mycobacteriaceae*...
- ... *Mycobacteriia*, *Actinomycetes* and *Related Organisms*, *Eubacteriia*, *Bacteriia*, *Microorganisms*
- ... ORGANISMS: BCG (*Mycobacteriaceae*); ...
- ... *Mycobacterium bovis* (*Mycobacteriaceae*)

CHEMICALS & BIOCHEMICALS: ...liposomes...

...phosphatidyl inositol mannosides...

BI SYSTEMATIC CODES:

...08881 *Mycobacteriaceae*

COMMON TAXONOMIC TERMS:

13/3, K2 (Item 2 from file: 5)
DI ALCG(R) File 5: Biosis Preview(R)
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17113636 BIOSIS NO.: 200300072355

Identification of the bound and unbound lipids on the cell envelopes of *Mycobacterium bovis*.

AUTHOR: Dandapat P (Reprint); Verma Rishendra; Venkatesan K (Reprint); Sharma V D (Reprint); Katoch V M (Reprint)

AUTHOR ADDRESS: Central JALMA Institute for Leprosy, Agra, UP, 280 205,

India**India

JOURNAL: Indian Journal of Animal Sciences 72 (11): p946-950 November 2002
2002

MEDIMUM print

ISSN: 0367-8318 (ISSN print)

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

Identification of the bound and unbound lipids on the cell envelopes of *Mycobacterium bovis*.

ABSTRACT: Sixteen *Mycobacterium bovis* isolates from bovine tissues and one reference strain *M. bovis* AN5 were investigated for different bound and unbound lipids. For comparison, other mycobacterial species included in the study were *M. tuberculosis*, *M. bovis* BCG and *M. avium*. The thin layer chromatographic (TLC) study indicated the absence of C-mycosides in all the *M. bovis* isolates while phosphatidyl inositol mannosides (PIMs) was present in all *M. bovis* isolates, *M. bovis* BCG and *M. tuberculosis* as shown by TLC with the solvent chloroform - methanol - water (60:30:6, v/vX1). The polar glycolipids were present in all the *M. bovis* isolates and *M. tuberculosis* showing seven bands with Rf value 0.62, 0.55, 0...

... 0.89 (75:22:3, v/vX1). The uni dimensional TLC mycolates patterns of all *M. bovis* isolates including AN5 showed one spot corresponding to al pha-mycolate (as in *M. tuberculosis*) and...

DESCRIPTIONS:

BIO SYSTEMATIC NAMES: *Mycobacteriaceae*....

... *Mycobacteria*, *Actinomycetes* and *Related Organisms*, *Eubacteria*, *Bacteria*, *Microorganisms*

ORGANISMS: *Mycobacterium bovis* (*Mycobacteriaceae*)....

... pathogen, strain-BCG, strain-AN5...

... *Mycobacterium tuberculosis* (*Mycobacteriaceae*)....

... *Mycobacterium avium* (*Mycobacteriaceae*)--

DI SEASES: *Mycobacterium bovis* infection...

MESH TERMS: *Mycobacterium Infections* (MeSH)

CHEMICALS & BIOCHEMICALS: Lipids....

... phosphatidyl inositol mannosides

BIO SYSTEMATIC CODES:

08881 *Mycobacteriaceae*

COMMON TAXONOMIC TERMS:

13/3, K/3 (Item 3 from file: 5)

DI ALCOHOL FILE: 5: Bi osis Previews(R)
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15159368 BIOLOGY NO.: 199900419028

Production and partial characterization of antibody to cord factor (trehalose 6,6'-di mycolate) in mice

AUTHOR: Fujiwara Nagatoshi; Oka Shiro; Ide Mchiyo; Kashiwa Kazutoshi; Honda Takeshi; Yano Ikuuya (Reprint)

AUTHOR ADDRESS: Department of Bacteriology, Osaka City University Medical

School, 1-4-3 Asahi-machi, Abeno-ku, Osaka, Osaka, 545-8585, Japan**Japan
 JOURNAL: Microbiology and Immunology 43 (8): p785-793 1999 1999
 MEDLINE print
 ISSN: 0385-5600
 DOCUMENT TYPE: Article
 RECORD TYPE: Abstract
 LANGUAGE: English

... ABSTRACT: water micelles without carrier protein. The antigenic TDM was isolated and purified chromatographically from the chloroform-methanol extractable lipids of *R. ruber*. The hydrophobic moiety of this TDM was composed of two molecules of...
 ... glycosyl monomycolates differing in the carbohydrate moiety, such as that of glucose mycolate (GM) and mannose mycolate (MM), obtained from *R. ruber*. Moreover, the antibody reacted against mycolic acid methyl ester itself...
 ... mice myeloma cells to examine its biological activities and the role of humoral immunity in mycobacterial infection. MoAb reacted against the TDM, glycosyl mycolate, and mycolic acid methyl ester in ELISA...

13/3, K/4 (Item 4 from file: 5)
 DiALCG(R) File 5: Biosis Previews(R)
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08714564 BIOSIS NO.: 198784068713
 LI POPOLYSACCHARIDE ISOLATED FROM MYCOBACTERIUM TUBERCULOSIS
 STRAIN AOYAMA B
 AUTHOR: KOBATAKE H (Reprint); KUMAGAI K; KITAGAWA O; NIWA S-I
 AUTHOR ADDRESS: CENTRAL RES LAB, ZERIA PHARMACEUTICAL CO LTD, OSHIKIRI
 2512, KONAN-MACHI, SAI TAMA 360-01, JPN*JAPAN
 JOURNAL: Agricultural and Biological Chemistry 51 (3): p691-698 1987
 ISSN: 0002-1369
 DOCUMENT TYPE: Article
 RECORD TYPE: Abstract
 LANGUAGE: ENGLISH

LI POPOLYSACCHARIDE ISOLATED FROM MYCOBACTERIUM TUBERCULOSIS
 STRAIN AOYAMA B

ABSTRACT: Methods for efficient extraction and simple purification of the lipopolysaccharide specific for *Mycobacterium tuberculosis* were developed. Crude lipopolysaccharide was obtained from sterilized cells through mechanical disintegration, Triton X-100 extraction, ethanol precipitation, glucosidase digestion, and gel-filtration chromatography. The lipopolysaccharide was further purified by treatments with pyridine-methanol and chloroform-methanol to remove the contaminating glycolipids and phospholipids, and by digestion with the immobilized trypsin to remove the contaminating proteins. The purified lipopolysaccharide was composed of a polysaccharide consisting of D-mannose and D-arabinose, and fatty acids, mainly palmitic, tuberculostearic, and stearic acids, which were bound in ester linkages. The lipopolysaccharide had strong tumor regressing activity on the mouse fibrosarcoma.

DESCRIPTIONS:

BIO SYSTEMATIC NAMES: Mycobacteriaceae-...

... *Mycobacteria*, *Actinomycetes* and Related Organisms, *Eubacteria*, *Bacteria*, *Microorganisms*
 CHEMICALS & BIOCHEMICALS:

BI OSYSTEMATIC CODES:
08881 Mycobacteriaceae

COMMON TAXONOMIC TERMS:

13/3, K/5 (Item 1 from file: 155)
DIALOG(R) File 155: MEDLINE(R)
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04722358 PM D: 4808895 Record Identifier: PMC246531
Biogenesis of glycosyl di glycerides in *Mycobacterium smegmatis*.
Schultz J C; Elbein A D
Journal of bacteriology (UNITED STATES). Jan 1974, 117 (1) p107-15,
ISSN 0021-9193-Print Journal Code: 2985120R

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Other Citation Owner: NLM

Record type: MEDLINE; Compl et ed

Biogenesis of glycosyl di glycerides in *Mycobacterium smegmatis*.
A particulate enzyme preparation from *Mycobacterium smegmatis* catalyzes the transfer of [(14)C]galactose from uridine 5'-di phosphate (UDP)-[(14)C]galactose and of [(14)C]glucose from UDP-[(14)C]glucose into chlorophorm soluble products. The radioactive neutral lipids were purified by passage through diethylaminoethyl-cellulose, followed by thin-layer chromatography. When UDP-glucose was used as substrate, two major radioactive lipids were obtained; one had a hexose:glucose:glycerol ratio of 1:1:1. The second...
... hexose:glycerol ratio of 2:1 and, in addition to glucose, contained lesser amounts of mannose and galactose. With UDP-galactose as substrate, two radioactive products were observed that were chromatographically...

... labeled mono- and di glycosyl di glyceride. Palmitate and oleate were the predominant fatty acid constituents in these lipids and were present in equimolar amounts in all of the products examined. The products have...

... been identified as monoglycosyl di glyceride and a diglycosyl di glyceride containing glucose as the major hexose along with mannose and galactose. Properties of the galactosyl and glucosyl transferases are described.

Descriptors: *Glycerides - biosynthes - Bl; *Lipids - biosynthesis -- Bl; *Mycobacterium - metabolism - ME; metabolism - ME; Glucosidases -- metabolism - ME; Glycerides - analysis - AN; Glyceraldehyde-Dehydrogenase -- analysis - AN; Hydrogen-Ion Concentration; Lipids - analysis - AN; Mannose - analysis - AN; Mycobacterium - analysis - AN; Nucleoside-Diphosphate Sugars - metabolism - ME; Oleic Acid - analysis - AN; Palmitic Acid - analysis - AN...

Chemical Name: Carbon Radiotopes; Glycerides; Lipids; Nucleoside-Diphosphate Sugars; Oleic Acids; Palmitic Acids; Galactose; Mannose; Glucose; Uridine; Glyceraldehyde-Dehydrogenase; Galactosidases; Glucosidases

13/3, K/6 (Item 2 from file: 155)
DIALOG(R) File 155: MEDLINE(R)
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04208701 PM D: 5001480
A comparison of the chemical composition of *Mycobacterium*
Page 50

t u b e r c u l o s i s m u r i s w i t h M y c o b a c t e r i u m t u b e r c u l o s i s b o v i s (

B C G)

C a l d e s G; P r e s c o t t B

B i o c h e m i c a l a n d b i o p h y s i c a l r e s e a r c h c o m m u n i c a t i o n s (U N I T E D S T A T E S) Aug 20 1971, 44 (4) p852-8, ISSN 0006-291X - Print Journal Code: 0372516

P u b l i s h i n g M o d e l P r i n t

D o c u m e n t t y p e : J o u r n a l A r t i c l e

L a n g u a g e s : E N G L I S H

M a i n C i t a t i o n O w n e r : N L M

R e c o r d t y p e : M E D L I N E ; C o m p l e t e d

A comparison of the chemical composition of *Mycobacterium tuberculosis muris* with *Mycobacterium tuberculosis bovis* (

B C G)

D e s c r i p t o r s : * M y c o b a c t e r i u m b o v i s - a n a l y s i s - - A N ; *

M y c o b a c t e r i u m t u b e r c u l o s i s - - a n a l y s i s - - A N ; A r a b i n o C a r b o x y l i c A c i d s - - a n a l y s i s - - A N ;

A r a b i n o s e - a n a l y s i s - - A N ; C h l o r o f o r m C h r o m a t o g r a p h y , I o n E x c h a n g e;

C h r o m a t o g r a p h y , P a p e r ; E t h a n o l ; E t h y l E t h e r s ; G a l a c t o s e - a n a l y s i s - - A N ;

G l u c o s e - a n a l y s i s - - A N ; H e x o s a m i n e s - - a n a l y s i s - - A N ; L i p i d s - a n a l y s i s - - A N ;

M a n n o s e - a n a l y s i s - - A N ; R i b o s e - a n a l y s i s - - A N ; S o l u b i l i t y ;

S p e c i e s S p e c i f i c i t y

C h e m i c a l N a m e : A r a b i n o A c i d s ; E t h y l E t h e r s ; H e x o s a m i n e s ; L i p i d s ;

A r a b i n o s e ; G a l a c t o s e ; M a n n o s e ; R i b o s e ; G l u c o s e ; E t h a n o l ;

C h l o r o f o r m

13/3, K/7 (Item 1 from file: 370)

D I A L C G (R) F i l e 370: S c i e n c e

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00508546 (U S E 9 F O R F U L L T E X T)

C D 1 d - R e s t r i c t e d I m m u n o g l o b u l i n G F o r m a t i o n t o G P I - A n c h o r e d A n t i g e n s

M e d i a t e d b y N K T C e l l s

S c h o f i e l d , L o u i s ; M c C o n v i l l e , M a l c o l m J . ; H a n s e n , D i a n a ; C a m b e l l , A .

S t e w a r t ; F r a s e r - R e i d , B e r t ; G r u s b y , M c h a e l J . ; T a c h a d o , S o u v e n i r D .

L . S c h o f i e l d , D . H a n s e n , S . D . T a c h a d o , W a l t e r a n d E l i z a H a l l I n s t i t u t e o f

M e d i c a l R e s e a r c h , P o s t O f f i c e , R o y a l M e l b o u r n e H o s p i t a l , V i c t o r i a 3 0 5 0 ,

A u s t r a l i a . M . J . M c C o n v i l l e , D e p a r t m e n t o f B i o c h e m i s t r y a n d M o l e c u l a r

B i o l o g y , U n i v e r s i t y o f M e l b o u r n e , V i c t o r i a 3 0 5 2 , A u s t r a l i a . A . S t e w a r t

C a m p b e l l , I N S M E D P h a r m a c e u t i c a l s , 8 8 0 E a s t L e i g h S t r e e t , R e c h m o n d , V A

2 3 2 1 9 , U S A . B . F r a s e r - R e i d , N a t u r a l P r o d u c t s a n d G l y c o t e c h n o l o g y , 4 1 1 8

S w a r t h m o r e R o a d , D u r h a m N C 2 7 7 0 7 , U S A . M . J . G r u s b y , D e p a r t m e n t o f

I m m u n o l o g y a n d I n f e c t i o u s D i s e a s e s , H a r v a r d S c h o o l o f P u b l i c H e a l t h , a n d

D e p a r t m e n t o f M e d i c i n e , H a r v a r d M e d i c a l S c h o o l , B o s t o n , M A 0 2 1 1 5 , U S A .

S c i e n c e V o l . 2 8 3 5 3 9 9 p p . 2 2 5

P u b l i c a t i o n D a t e : 1 - 0 8 - 1 9 9 9 (9 9 0 1 0 8) P u b l i c a t i o n Y e a r : 1 9 9 9

D o c u m e n t T y p e : J o u r n a l I S S N : 0 0 3 6 - 8 0 7 5

L a n g u a g e : E n g l i s h

S e c t i o n H e a d i n g : R e p o r t s

W o r d C o u n t : 2 4 8 0

(T H I S I S T H E F U L L T E X T)

... T e x t : r e l a t e d h u m a n C D 1 b a n d C D 1 c m o l e c u l e s c a n e l i c i t c y t o l y t i c a n d
i n t e r f e r o n - (g a m m a) r e s p o n s e s b y p r e s e n t i n g m y c o b a c t e r i a l g l y c o l i p i d
a n t i g e n s t o C D 8 . s u p (+) o r C D 4 . s u p (-) C D 8 . s u p (-) T c e l l s (B 4) . M u r i n e V . . .

... b e G P I s (B 6) . T h e r e f o r e , C D 4 . s u p (+) N K T c e l l s m a y p a r t i c i p a t e i n
C D 1 d - r e s t r i c t e d r e c o g n i t i o n o f l i p i d a n t i g e n s . H o w e v e r , t h e n a t u r a l
l i g a n d a n d f u n c t i o n a l s i g n i f i c a n c e o f N K T c e l l s i n i m m u n e r e s p o n s e s i n . . .

... m o l e c u l e s w a s c o n f i r m e d b y g a s c h r o m a t o g r a p h y - m a s s s p e c t r o m e t r y (G C - M S) .
I n a d d i t i o n , a p h o s p h o r y l a t e d a n d l i p i d a t e d m a m m a l i a n G P I b a s e d o n
t h e r a t b r a i n T h y - 1 G P I (F i g . 1 C) , a n d t h e c o r r e s p o n d i n g

i n o s i t o l phosphoglycan (IPG) lacking a lipid tail, both chemically synthesized by n-pentenyl glucoside strategy and compositionally pure by .sup(1...)

... in class II.sup(-/-) mice with the mf VSG of *T. brucei*, but not the deacylated soluble VSG derived by PI-specific phospholipase C (PI-PLC) hydrolysis (Fig. 1A), demonstrating that the GPI lipid domain is required, and the GPI glycan is not sufficient, for the phenomenon. This was...

... responses in class II.sup(-/-) mice require linkage of antigen to GPI with an intact lipid, which may be composed of diacylglycerol or alkyldiacylglycerol... iM₁M₂ GPIs of *L. mexicana*. Nomenclature is as described (B14), where all isomers contain one mannose in α1-3 linkage, EP indicates ethanolamine phosphate, and M₁ and M₂ indicate the number of mannose residues, as shown. (C) Chemically synthesized rat brain Thy-1 GPI...

References and Notes:

... anchored P. falciparum proteins, purified by high-performance liquid chromatography and affinity chromatography (27), were extracted in chloroform/methanol (2:1), precipitated with acetone, solubilized and reduced, diluted in 5 mM CaCl₂ (2), digested for 72 hours at 37...

... and purified by high-performance thin-layer chromatography (HPTLC) (R. inf(f.) = 0.05), with chloroform/methanol/acetic acid/water (C/M HAc/W 25:15:4:2). CMW (1:2:0.8) extracts of *L. mexicana* promastigotes were purified over Octyl-Sepharose followed by HPTLC with a solution...

13/3, K/8 (Item 2 from file: 370)
DI ALCO(R) File 370: Science

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00503975 (USE 9 FOR FULLTEXT)
Structural Requirements for Glycolipid Antigen Recognition by CD1b-Restricted T Cells
Moody, D. Branch; Reinhold, Bruce B.; Guy, Mark R.; Beckman, Evan M.; Frederique, Daphney E.; Furlong, Stephen T.; Ye, Song; Reinhold, Vernon N.; Sieling, Peter A.; Mordini, Robert L.; Bersa, Gurdyal S.; Porcelli, Steven A.
D. Moody, E. M. Beckman, D. E. Frederique, S. T. Furlong, S. A. Porcelli, Lymphocyte Biology Section, Division of Rheumatology, Immunology, and Allergy, Brigham and Women's Hospital and Harvard Medical School, Boston, MA 02115, USA; B. B. Reinhold, S. Ye, V. N. Reinhold, Mass Spectrometry Unit, Boston University School of Medicine, Boston, MA 02118-2394, USA; M. R. Guy and G. S. Bersa, Department of Microbiology, Colorado State University, Fort Collins, CO 80523-1677, USA; P. A. Sieling and R. L. Mordini, Division of Dermatology and Department of Microbiology and Immunology, UCLA School of Medicine, Los Angeles, CA 90033, USA.
Science Vol. 278 5336 pp. 283

Publication Date: 10-10-1997 (971010) Publication Year: 1997

Document Type: Journal ISSN: 0036-8075

Language: English

Section Heading: Reports

Word Count: 2372

(THIS IS THE FULLTEXT)

Abstract: The human CD1b protein presents lipid antigens to T cells, but the molecular mechanism is unknown. Identification of mycobacterial glucose monomycolate (GM) as a CD1b-presented

glycolipid allowed determination of the structural requirements for...

...of GMM to CD1b-restricted T cells was not affected by substantial variations in its lipid tails, but was extremely sensitive to chemical alterations in its carbohydrate or other polar substituents. These findings support the view that the recently demonstrated hydrophobic CD1 groove binds the acyl chains of lipid antigens relatively nonspecifically, thereby positioning the hydrophilic components for highly specific interactions with T cells...

...Text: At least two human CD1 proteins (CD1b and CD1c) mediate specific T cell recognition of bacterial lipid and glycolipid antigens (B3) (B4) (B5) (B6). Two classes of CD1-restricted lipid antigens-mycolic acids and phosphoglycolipids such as phosphatidyl inositol mannosides (PIMs) or lipoparabinomannan (LAM) (B4) (B5)-have been identified. To find other antigens presented by the CD1 system we established additional T cell lines specific for mycobacterial lipid antigens. Analysis of the CD4^{sup(+)} CD8^{sup(-)} TCR^α (beta)^{sup(+)} T cell line LDN5, isolated from a skin biopsy of a cutaneous reaction to *Mycobacterium leprae* antigen, revealed evidence for a third class of CD1-restricted lipid antigens (B7)...

...LDN5 proliferated to only one lipid fraction separated by preparative thin-layer chromatography (TLC) from organic extracts of *M. leprae* and cross-reacted strongly with a lipid of identical retardation factor ($R_{inf}(f)$) extracted from *M. phlei* (B8). TLC staining indicated that the lipid contained carbohydrate (anthrone positive) but not phosphate (molybdenum negative), distinguishing this antigen from the two...

...The structures of the lipid and carbohydrate moieties of the antigenic glycolipid were determined separately. The products resulting from alkaline hydrolysis of the antigen were partitioned and recovered separately from organic and aqueous phases. The organic phase lipids coeluted on high-pressure liquid chromatography (HPLC) with mycobacterial mycolic acids (B4), and the aqueous phase contained a single product that was identified as...

...This composition analysis suggested that the glycolipid antigen was glucose monomycolate (GMM, a previously described mycobacterial cell wall component consisting of a single glucopyranoside residue esterified at its sixth carbon to...

...containing a monounsaturated, C₁₈(80) wax-ester mycolic acid (Fig. 1C) (B10). GMM was separately isolated from trehalose di mycolate (cord factor) treated with aqueous acid, which released intact GMM by...

...We determined the role of the lipid portion of GMM in T cell recognition by isolating GMM from mycobacterial species that differ in mycolic acid composition. *Mycobacterium bovis*, *BCG*, *M. fortuitum*, *M. smegmatis*, and *M. phlei* produce GMs consisting of glucose esterified to mycolic...

...B11). This antigen lacked long chain length (compared with C₁₈(80) mycolic acids of mycobacteria), cyclization, double bonds, and R groups, ruling out all of these natural chemical variations of...

...LDN5, we considered whether the spectrum of antigenic glycolipids might be extremely broad (any glucosylated lipid) or be limited to mycolyl glycolipids. Mycolyl glycolipids are defined by the ... atoms (B14). Therefore, recognition of GMM was absolutely dependent on the a-branched, (beta)-hydroxy lipid structure that defines mycolyl lipids, but the long distally substituted acyl chains found in many naturally occurring mycolic acids were...

...The role of the carbohydrate moiety of the glycolipid in T cell recognition was separately evaluated. The CD1b-restricted response of LDN5 to GMM was carbohydrate dependent, because free mycolic...

...cell response to mycolyl glycolipids most similar to GMM we prepared two stereoisomers of GMM: mannose monomycolate and galactose monomycolate (B13). LDN5 proliferated at similar doses to natural and semi synthetic GMM; in contrast, LDN5 responded very weakly or not at all to mannose monomycolate and galactose monomycolate, epimers of GMM at the 2 or 4 positions of the...

...The identification of this third class of lipid antigens revealed a general motif for CD1b-restricted lipid antigens. Synthetic GMM is intermediate in structure between the two previously known antigens, PIM and...

...mycolic acid, but like PIM is glycosylated. The long (C₁inf(80)) and distally substituted lipid moiety of natural GMM was shortened (C₁inf(32)) and simplified (Fig. 2O) to take...

...the two saturated acyl chains of PIM without losing antigenicity, as long as the branched lipid structure was maintained (Fig. 2D). Thus, CD1b-restricted antigens from each of the three classes...

...The identification of this motif should guide the search for new foreign and potentially self lipid antigens. For example, these results demonstrate that glycolipids with short-chain mycolic acids characteristic of...

...to the exterior of the protein through a narrow opening lined by conserved charged and polar amino acids above the F (prime) pocket (B16). Thus, in terms of size, shape, and electrostatic topography, the CD1 ligand-binding groove is ideally suited to interact with lipids conforming to the CD1b antigen motif with the two acyl chains buried within the A...

...F (prime) pockets. This mechanism of binding would leave the hydrophilic cap to interact with polar and charged amino acids at the entrance to the groove (Fig. 4) (B17). In the...straightforward structural model provides a mechanism by which T cells specifically interact with unconstrained, hydrophobic lipid antigens in an aqueous environment. Detailed structural studies of this model will reveal how the...

...tetanus toxin-specific (tet tox); 10 (μ g/ml) and DNase [CD1c-restricted, M tuberculosis lipid-specific (Tb organic); 1/200 dilution], two examples shown here. Stimulation index was calculated as...

...Figure Removed

Figure F2

Caption: The fine structure of the lipid moiety of GMM did not determine T cell recognition. (A) LDN5 proliferated in response to GMM from all strains tested [M phlei (square-solid), BCG (□), M smegmatis (▵), and M fortuitum (down triangle, filled)] but not to trehalose dimycolate...

...of 1:1 corresponded to the concentration of GMM recovered from preparative TLC of organic extract from 15 mg of each bacterium (B8). (B) LDN5 lysed CIR lymphoblastoid target cells (effector...

...to natural or semi synthetic GMM at similar doses, but gave only a trace response to mannose monomycolate and no response to galactose monomycolate. These mannose- and galactose-containing mycolyl lipids differ from GMM only in the orientation of a single hydroxyl

group at the 2...

...Figure F4

Caption: Structural motif for CD1b-restricted antigens. Each of the known CD1b-restricted lipid antigens contains a proximally branched acyl chain or two acyl chains capped by a hydrophilic...

References and Notes:

...8. *Mycobacterium phlei*, *M. tuberculosis* H37Ra, *M. fortuitum*, *M. smegmatis*, and *M. bovis* BOG were cultivated in 7H9 medium (Difco) supplemented with 0.05% Tween-80 and 1% glucose, mannose, or galactose. Organic extracts ($1 \times$) were made by shaking 7.5 mg of lyophilized bacteria per 1 ml of chloroform:methanol (2:1) at 20.0°C for 2 hours. Sonicates ($1 \times$) were made...B6). Mycolyl glycolipids were purified with preparative silica TLC in solvent A (60:16:2 chloroform:methanol:water) and extraction from silica into chloroform:methanol (2:1) or by eluting an open 2 cm by 20 cm silica column serially with chloroform and acetone in a stepwise gradient. The antigenic glycolipid eluted in 30% acetone in chloroform;

...

...glycolipid was hydrolyzed, and the resulting products were partitioned between aqueous and organic phases. Organic soluble products were derivatized with phenacyl bromide and coeluted on C18 reversed-phase HPLC with M...

...on a Quattro II triple quadrupole mass spectrometer in the positive mode with samples in chloroform:methanol (2:1) at a flow rate of 2 to 4 (ml) / min...

...12. *Mycobacterium bovis* BOG and *M. tuberculosis* mycolic acids contain cyclopropyl groups, whereas *M. smegmatis* mycolic acids contain double...

...and a (prime) mycolates) or named R groups as follows: *M. tuberculosis* (a, keto, methoxy); BOG (a, keto); *M. phlei* (a, wax-ester, and possibly small amounts of keto); and M...

...A. Nashed, L. Anderson, Carbohydr. Res. 218, 95 (1991)] were used, except that the appropriate lipid [3-hydroxypalmitate (Matreya), tetradeacyl hexadecanoate (Wako), or triacontanoate (Sigma)] or carbohydrate [glucose, mannose, or galactose (Sigma)] were substituted in the reactions. "Natural" hexose mycolates were isolated from *M. phlei* grown in glucose-, galactose-, or mannose-supplemented media [Y. Natsuhara, S. Oka, K. Kaneda, Y. Kato I. Yano, Cancer Immunol. Immunother. ...

...G. S. Besra et al., Proc. Natl. Acad. Sci. U.S.A. 91, 12735 (1994). Lipid structures were confirmed by ESI-MS and TLC. Nuclear magnetic resonance analysis of semi-synthetic hexose...processing, as was the case for CD1b-restricted recognition of mycolic acid (B3) (B4) and lipoglycans (B5). Treatment of macrophages with 25 nM chloroquine reduced the proliferative response of LDN5 to...

...17. The CD1-lipid antigen association is predicted to occur with an orientation similar to that of phosphatidylcholine in...

Bellstein Abstract Id: 5885241
 Title: Lipopolysaccharide isolated from Mycobacterium tuberculosis Strain Aoyama B
 Document Type: Journal Record Type: Abstract
 Author: Kobatake, Hiroshi; Kumagai, Kazuhiro; Kitagawa, Osamu; Niwa, Seiichi
 Citation: Agric. Biol. Chem. (1987) Series: 51-3, 691-698 CODEN: ABCHA6
 Language: English
 Abstract Language: English

Title: Lipopolysaccharide isolated from Mycobacterium tuberculosis Strain Aoyama B
 Abstract: Methods for efficient extraction and simple purification of the lipopolysaccharide specific for Mycobacterium tuberculosis were developed. Crude lipopolysaccharide was obtained from sterilized cells through mechanical disintegration, Triton X-100 extraction, ethanol precipitation, glucosidase digestion, and gel-filtration chromatography. The lipopolysaccharide was further purified by treatments with pyridine-methanol and chloroform-methanol to remove the contaminating glycolipids and phospholipids, and by digestion with the immobilized trypsin to remove the contaminating proteins. The purified lipopolysaccharide was composed of a polysaccharide consisting of D-mannose and D-arabinose, and fatty acids, mainly palmitic, tuberculostearic, and stearic acids, which were bound in ester linkages. The lipopolysaccharide had strong tumor regressing activity on the mouse fibrosarcoma.

13/3, K/10 (Item 1 from file: 399)

DI ALCO(R) File 399: CA SEARCH(R)

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138152262 CA: 138(11)1522621 PATENT
 Vaccine adjuvant properties of liposomes formed at elevated temperatures from the polar chloroform extractable lipids from *Mycobacterium bovis* BCG
 INVENTOR(AUTHOR): Spratt, G. Dennis; Krishnan, Lakshmi; Sad, Subash
 LOCATION: Can.,
 ASSIGNEE: National Research Council of Canada
 PATENT: PCT International; WO 200311336 A2 DATE: 20030213
 APPLICATION: WO 2002CA1217 (20020802) *US PV309512 (20010803)
 PAGES: 46 pp. CODEN: PI XXD2 LANGUAGE: English
 PATENT CLASSIFICATIONS:
 CLASS: A61K 039/39A; A61K-009/127B; A61P-037/04B; A61P-035/00B
 DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ;
 CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; ES; FI; GB; GD; GE; GH;
 GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU;
 LV; MA; MD; MG; MN; MW; MK; MZ; NO; NZ; OM; PH; PL; PT; RO; RU; SD; SE;
 SG; SI; SK; SL; TJ; TM; TR; TT; TZ; UA; UG; US; UZ; VN; YU; ZA; ZM; ZW
 AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESIGNATED REGIONAL: GH; GM; KE; LS; MW;
 MZ; SD; SI; SZ; TZ; UG; ZM; ZW; AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES;
 FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; SK; TR; BF; BJ; CF; OG; CI; OM;
 GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG

13/3, K/11 (Item 1 from file: 135)

DI ALCO(R) File 135: NewsRx Weekly Reports

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0000171563 (USE FORMAT 7 OR 9 FOR FULLTEXT)

Liposomes prepared from BCG possessed adjuvant activity in vivo

Immunotherapy Weekly, November 10, 2004, p.224

DOCUMENT TYPE: Expanded Reporting LANGUAGE: English
 RECORD TYPE: FULLTEXT
 WORD COUNT: 481

Liposomes prepared from BOG possessed adjuvant activity in vivo

TEXT: Liposomes prepared from phosphatidyl inositol mannosides from *Mycobacterium bovis* bacillus Calmette-Guerin (BOG) activated dendritic cells and possessed adjuvant activity in vivo.

According to a study from Canada, "Liposome vesicles could be formed at 65 degrees C from the chloroform soluble, total polar lipids (TPL) extracted from *Mycobacterium bovis* bacillus Calmette-Guerin (BOG). Mice immunized with ovalbumin (OVA) entrapped in TPL liposomes produced both anti-OVA antibody and cytotoxic T lymphocyte responses. Murine bone marrow-derived dendrite...
 IL-6 (IL-6), IL-12, and tumor necrosis factor upon exposure to antigen-free TPL liposomes."

... and colleagues at the National Research Council of Canada. "The activation of dendritic cells by liposomes prepared from each purified lipid component of TPL was evaluated *in vitro*."

"A basal activity of phosphatidyl inositol liposomes to activate proinflammatory cytokine production appeared to be attributable to the tubercular fatty acyl 19:0 chain characteristic of mycobacterial glycerolipids, as similar lipids lacking tubercular chains showed little activity," reported the researchers. "Phosphatidyl inositol di mannoside was identified as the primary lipid that activated dendritic cells to produce amounts of proinflammatory cytokines several times higher than the basal level, indicating the importance of mannose residues."

"Although the activity of phosphatidyl inositol di mannoside was little influenced by palmitoylation of mannose at C-6, a further palmitoylation at inositol C-3 diminished the induction levels of..."

... and IL-12," stated Sprott and his collaborators. "Further, OVA entrapped in palmitoyl-phosphatidyl inositol di mannoside liposomes was delivered to dendritic cells for major histocompatibility complex class I presentation more effectively than TPL OVA-liposomes. BOG liposomes containing mannose lipids caused up-regulation of costimulatory molecules and CD40."

"Thus, the inclusion of pure phosphatidyl inositol mannosides of BOG in lipid vesicle vaccines represents a simple and efficient option for targeting antigen delivery and providing immune..."

... published the results of their research in Infection and Immunity (Activation of dendritic cells by liposomes prepared from phosphatidyl inositol mannosides from *Mycobacterium bovis* bacillus Calmette-Guerin and adjuvant activity in vivo. Infection and Immunity, 2004; 72(9): 5235-5246...)

... USA.

The information in this article comes under the major subject areas of Vaccine Adjuvant, Mycobacteria, Vaccine Development, Liposomes, Vaccine Delivery, Immunology, and Immunotherapy.

This article was prepared by Immunotherapy Weekly editors from staff

0309681 DBR Accession No.: 2003-11466 PATENT

Novel liposome useful for activating dendritic cells or as immunomodulating carriers for antigens in vaccines, comprises a chloroform soluble and extractable total polar lipid of *Mycobacterium species* - *Mycobacterium bovis* or BCG lipid, chloroform soluble

liposome characterization useful for cancer and infection therapy

AUTHOR: SPROTT G D; KRI SHNAN L; SAD S

PATENT ASSIGNEE: NAT RES COUNCIL CANADA 2003

PATENT NUMBER: WO 2003011336 PATENT DATE: 20030213 WPI ACCESSION NO.: 2003-239475 (200323)

PRIORITY APPLICATION NO.: US 309512 APPLICATION DATE: 20010803

NATIONAL APPLICATION NO.: WO 2002CA1217 APPLICATION DATE: 20020802

LANGUAGE: English

Novel liposome useful for activating dendritic cells or as immunomodulating carriers for antigens in vaccines, comprises a chloroform soluble and extractable total polar lipid of *Mycobacterium species* - *Mycobacterium bovis* or BCG lipid, chloroform soluble

liposome characterization useful for cancer and infection therapy

ABSTRACT: DERIVED ABSTRACT: NOVELTY - A liposome (I) comprising a chloroform soluble and extractable total polar

lipid of *Mycobacterium spp.*, is new. DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following: (1) a liposome (II) comprising an isolated lipid fraction in biologically pure form from total polar lipids of *M bovis* *Bacillus Calmette-Guerin* (BCG) and an associated antigen; (2) a liposome vaccine composition (III) comprising (I) or (II), where the liposome contains an associated antigen; and (3) preparation (M) of (I) or (II) by drying chloroform soluble and extractable lipid and then hydrating the dried lipid at a temperature of 65-75 degreesC in water or phosphate buffered saline (PBS). BIOTECHNOLOGY - Preferred Liposome: (I) comprises a chloroform soluble and extractable polar lipid of *M bovis* BCG which is in biologically pure form. The chloroform soluble and extractable polar lipid comprises at least one of phosphatidyl inositol (PI), phosphatidyl inositol mannoside (PIM1), phosphatidyl inositol di mannoside (PIM2), mono and di palmitoylated forms of PIM1 and PIM2 (such as palmitoyl-PIM1 or palmitoyl-PIM2), acylated phospholipids of m/z 899, 1139 and 1155 m/z, phosphatidyl ethanolamine and cardiolipid. The chloroform soluble and extractable lipid is an acyl-phosphoglycerophosphate lipid of m/z 899, 1139 or 1155 comprising two sn-1,2 fatty acyl chains...

... first chain is tuberculosteric acid and a second chain is palmitic acid (C16:0). The chloroform soluble and extractable polar lipid is obtainable by a hot 50% ethanol extraction. In (I) or (II), the lipid ingredient is

synthesized chemically to correspond to the structure of a lipid isolated in biologically pure form from a *Mycobacterium* (I) additionally comprises lipid phosphatidyl ethanolamine in biologically pure form (I) comprises the chloroform soluble and extractable polar lipid of *M bovis* BCG and other lipid selected from

phosphatidyl choline, phosphatidyl glycerol, cholesterol and its mixture. The liposome is multilamellar or unilamellar. Preferred

Composition: In (II) the antigen is a protein. Preferred Method: In (M), the temperature is 65 degreesC. The liposome resulting from the method is multilamellar. (M) additionally comprises reducing the

size of a multilamellar liposome at a temperature of 65degreesC to yield a unilamellar liposome. An antigen is entrapped in the multilamellar or unilamellar liposome by inclusion of the antigen in water or PBS. ACTIVITY - Cytostatic; Immunomodulator. MECHANISM OF ACTION...

...in all 5 mice in a naive group within 12 days. Injection of antigen-free BOG liposomes resulted in a modest decline in tumor growth, where only 2 mice out of 5...

...of tumor growth was seen. Considerably more protection was seen for mice immunized with the BOG ovalbumin (OVA) liposome vaccine, where all mice tumors were less than 250 mm² after 12 days and remained ...

...life and is stable to the conditions found upon vaccination of an animal. EXAMPLE - Total lipid extracts were obtained from frozen-thawed cell pastes of *Bacillus firmus* or from fresh cell paste of *Mycobacterium bovis* by adding a one-phase solution of methanol, chloroform and water (2:1:0.8, v/v) in a ratio of 15 g cell dry weight/l. After 16 h the cellular debris was collected by centrifugation and re-extracted twice more. Extracts were pooled and made biphasic by addition of chloroform and water by the Bigh and Dyer method. Polar lipids in the chloroform bottom phase were freed of neutral lipids by differential solubility in cold acetone. Polar lipids, insoluble in acetone, were dried and dissolved into chloroform as the chloroform-extractable total polar lipids. *Bacillus Calmette Guerin* (BOG) total lipids dissolved in chloroform were filtered using a 0.45 microm nylon syringe-filter, to ensure there was no carry over of whole cells into the lipid extract. Preparation of *B. subtilis* BOG liposomes was as follows. About 30 mg of total polar lipids in chloroform were dried under a nitrogen stream followed by 1 hour under vacuum. Hydration was routinely...

...for 2-3 hour at 65degreesC with shaking. To investigate the effect of temperature on liposome formation, hydration was allowed to occur at 35-75degreesC in 10degreesC steps. Average vesicle diameters...

...Preparations were then freeze-dried and re-hydrated in phosphate buffered saline (PBS) at 65degreesC. Liposomes were left overnight at 4degreesC to anneal, then any OVA not associated with the liposomes was removed by ultracentrifugation and washing liposomes with PBS thrice. The final liposome pellets were re-suspended into PBS, and liposomes were filter-sterilized using 0.45 microm filters. Entrapped OVA was quantified after lipid removal and dry weights determined, as above. Average diameters were measured in a 5 mW He/Ne laser particle size. BOG liposome were made from the isolated lipid fractions obtained by the above method. (46 pages)

DESCRIPTIONS: *Mycobacterium bovis*, BOG lipid, chloroform soluble liposome, dendrite cell activation, immunomodulator, appl. cancer, infection therapy, vaccine bacterium lipofection transfection cytostatic (22, 19)

13/3/K/13 (Item 2 from file: 357)

DI ALCG(R) File 357: Derwent Biotech Res.

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t u b e r c u l o s i s e t c . ; a n t i t u m o r
 PATENT ASSIGNEE: Gelia-Shinyaku 1987
 PATENT NUMBER: JP 62004701 (Kokai) PATENT DATE: 870110
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Li popol ysaccharide and its production - using Mycobacterium
 t u b e r c u l o s i s e t c . ; a n t i t u m o r
ABSTRACT: A li popol ysaccharide comprising 80-95% polysaccharide
 comprising D-arabinose and D-mannose, and 5-20% of a fatty acid
 is described which has cytostatic, immunoregulatory, cell-activating...
 ... production is simple and gives a high yield. A suitable microorganism is
 used; e.g., Mycobacterium tuberculosis, Mycobacterium
 bovis or Propionibacterium acnes. In an example, M tuberculosis
 strain Aoyama B was cultured for 5 wk, and the dead cells were treated
 in a French press. The supernatant obtained was extracted with
 ethanol and centrifuged, and the precipitate was washed with ethanol
 and ethyl ether. The precipitate was treated with amylase and
 glucosidase (EC 3.2.1.3) to give crude lipopolysaccharide which
 was dissolved in pyridine and extracted with methanol and
 chloroform-methanol. The precipitate was redissolved and
 subjected to Sephadex G-4B chromatography, and the solution was
 subjected to dialysis and lyophilization to give the
 lipopolysaccharide. (5pp)

DESCRIPTORS: Lipopolysaccharide prep., purification,
 Mycobacterium tuberculosis, Mycobacterium bovis,
 Propionibacterium acnes etc., culture, antitumor, antibiotic,
 immunostimulant act. etc., bacterium

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 T cell activation by lipopeptide antigens. (Reports)
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T cell activation by lipopeptide antigens. (Reports)

AUTHOR ABSTRACT: Unlike major histocompatibility proteins, which bind peptides, CD1 proteins display lipid antigens to T cells. Here, we report that CD1 presents a family of previously unknown lipopeptides from Mycobacterium tuberculosis, named dehydrorhoxycobactins because of their structural relation to mycobactin siderophores. T cell activation was mediated by the (alpha)(beta) T cell receptors and was...

... components of these antigens. These studies identify a means of intracellular pathogen detection and identify lipopeptides as a

biochemical class of antigens for T cells, which, like conventional peptides, have a...

TEXT:

...molecular mechanism of antigen presentation by CD1 involves insertion of the alkyl chains of amphiphatic lipids into a deep hydrophobic groove formed by the (alpha)1 and (alpha)2 domains of...

...they can directly contact T cell receptors (TCR) (7-9). CD1a-restricted T cells recognize mycobacteria-infected cells and have antibacterial effects, suggesting a possible role in host defense (5, 10...

...candidate antigens presented by CD1a, TCR (alpha) and (beta) chains from the CD1a-restricted and mycobacteria-specific T cell line CD8-2 were cloned and transfected into J. RT3-T3. 5...

...M. tuberculosis cell walls. Antigenic factors capable of J. RT3.CD8-2 activation were efficiently extracted from whole mycobacteria by using chloroform-methanol (2:1), suggesting that the antigens were lipids, which were not covalently bound to the arabinogalactan complex of the mycobacterial cell wall (12). Elution of the stimulatory lipids from silica columns in polar solvents, such as methanol, indicated that the antigens displayed characteristics of polar lipids. Purification by high-performance liquid chromatography (HPLC) led to the isolation of a fraction that contained a set of structurally related compounds, which, by mass spectrometry analysis, yielded a...

...CD8-2 (Fig. 1A). T cell activation was not seen with other known CD1-presented lipid antigens such as mycolic acid, glucose monohydrate, or mannosyl phosphosoprenoids (Fig. 1B). Also, 838 did not activate polyclonal T cells or J. RT3 transfectants expressing TCRs that are specific for lipid antigens presented by CD1b or CD1c (Fig. 1B) (13-15). Together, these studies indicated that...

...197, which were each 16 u (the mass of oxygen) smaller than the previously described mycobacit acid and cobactin fragments of mycobactin, a known mycobacterial lipopeptide with iron-scavenging properties (16, 17). Therefore, we named the antigen dehydr oxy mycobactin (DDM 838). Identification...

...MS/MS products at m/z 727 and 84 indicated that the hydroxylsines found in mycobactin were substituted by lysines in the proposed structure for DDM (17). The presence of lysine...

...amino acid, (alpha)-methyl serine, instead of serine and threonine, which are present in most mycobacterial mycobactins (12, 16, 18). The identity of (alpha)-methyl serine as a component of DDM was...

...cyclized lysine (Fig. 2B).

(FIGURE 2 OM TTED)

Dehydr oxy mycobactin most likely functions as an intermediate in mycobactin synthesis. The mycobactin locus in M. tuberculosis encodes mycobactin synthase genes, Mbt A to Mbt J, which function as a nonribosomal peptide synthesis pathway (20). Previously proposed schemes of mycobactin biosynthesis have emphasized a likely role of Mbt A, Mbt B, Mbt C, Mbt D, Mbt E, and Mbt F in...

...salicyl moiety and synthesizing the peptide (Fig. 2D) (19, 21, 22). The final steps in mycobactin synthesis were thought to involve peptide termination by intramolecular attack of the lysine side chain...

...by suggesting that the lysines are incorporated into the peptide and subsequently hydroxylated to yield mycobactins (Fig. 2D). The two hydroxyl moieties, which are present in mycobactin but absent in DDM form two sites, which mediate high-affinity (~10. sup.-26) M...

... Consistent with the predicted roles of these hydroxyl groups in iron binding, we found that mycobactin was detected in the iron-bound form solely as ((M + Fe-2H).sup.+) at m...

... affinity at or near the bacteria-host interface and deliver iron to the bacterium (23). Mycobacteria produce mycobactin and related siderophores, whose synthesis is triggered by derepression of mycobactin synthase genes during growth in low-iron conditions (24). This process normally occurs during growth...

... human macrophages (25). These considerations suggested that DDM might be synthesized as an intermediate in mycobactin production during intracellular infection. We found that DDM-specific T cell activation occurs efficiently in...

... produce DDM at all (Fig. 3A). Because CD1a-restricted T cells are able to kill mycobacteria-infected cells (26), CD1 presentation of DDM may represent an early warning system for intracellular...

... of DDM structure in mediating T cell activation, we used HPLC to isolate several natural lipopeptides from M. tuberculosis. In addition to DDM-838 (Fig. 3B, peak E), M. tuberculosis produced...

... cis conformation (Fig. 2C). Whereas DDM-838 gave the most potent T cell response, homologous lipopeptides that had shorter or saturated fatty acids were substantially less stimulatory (Fig. 3C). Natural mycobactins were not recognized, suggesting that the hydroxylation of the lysine residues prevents T cell recognition (Fig. 3C). Also, lipid fractions containing mycobactin acid, which corresponds to a truncated lipopeptide lacking the butyric acid lysine moiety (Fig. 2B, m/z 642 fragment), were recognized weakly or...

... peptide and the length and saturation state of the fatty acyl chain.

These studies identify lipopeptides as a biochemical class of antigens for T cells, which share structural features of MHC...

...the predicted TCR contact surface (8). The A' pocket is largely hydrophobic, with no obvious polar groups that could hydrogen bond with the peptidic portion of DDM in the way that...

... Fig. 3D). Although the orientation of the peptidic moiety cannot be predicted precisely, the only polar residues in the binding groove are located at the A'-F' junction, so it seems...

... encoded peptide sequences, which are post-translationally modified by acylation so that their structures resemble mycobacterial DDM but are highly varied in their peptide sequences (29). The autoreactivity of T cells...

... 31). These observations raise the possibility that CD1 might also function to present structurally diverse lipopeptides encoded in the DNA of bacteria, viruses, or mammalian cells.

References and Notes

(1.) I...

... Proteins Struct. Funct. Genet. 11, 281 (1991).

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